The Builder.

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The International Statistical Congress.

READERS of the *Builder* do not require to be informed how much they are concerned with the science of political arithmetic. The judicial, the sanitary, the industrial, and the commercial divisions of statistics are necessary to the attainment of the objects of our publication. It is obvious that not a step could be taken towards the structural formation and sanitary arrangement and regulation of towns,—towards the provision and planning of churches, schools, hospitals and asylums, workhouses, prisons, or public buildings of whatever other class, without *data*, such as it is the aim of the congress, now sitting at Somerset House and King's College, to devise improved means for elucidating and supplying. The longer our journal runs on, however, the more we are astonished at a necessity for showing what is the range and character of the architect's study and pursuit. In the present case, we are surprised that no intimation to us of the congress, should have been deemed necessary; and that needless trouble should have been given, even in our procuring the report of the proceedings which is supplied to the daily journals. It has happened occasionally that our profession has been accused by such as those who are the promoters of statistical congresses, of not co-operating sufficiently in one department of the objects above referred to. It is clear, however, that, considering the *Builder* has done as much as most journals to disseminate information in some of the branches of statistics, omission, or a neglect of duty, is not always on the professional side.

Our readers are more likely to be aware of the importance to them of statistics, than of the special objects and of the nature of proceedings of the congress now sitting. The object of the present congress, as that of the sessions at Brussels in 1853, Paris in 1855, and Vienna in 1857, is to secure, as nearly as possible, uniformity as well as completeness in the tabulation of facts, so that these may admit of comparison. The idea of a congress originated at the time of the Exhibition of 1851. The chief proceedings in this week, commenced with the excellent address of the Prince Consort, have been divided in six sections; besides which there have been general meetings to receive reports of delegates from the several countries, and from the sections; whilst the mode of conducting the Ordnance Survey of the United Kingdom has been explained by Colonel Sir Henry James, R.E., Director of the Survey. These arrangements were decided upon by an organization commission, at a meeting prior to the opening of the congress, when an elaborate report on the programme of this, the fourth, session was submitted by Dr. Farr.

The programme, of which copies are printed in French as well as English, comprises papers with forms, and heads of inquiry, in the several branches of the subject. The first section, presided over by Lord Brougham, attends to the department of Judicial Statistics. The programme for this section has been written by Professor Leone Levi and Mr. J. Hill Williams,—the former attending to civil and criminal statistics, and the latter to that subject so nearly concerning all who are interested in building property and investment, statistics of the subdivisions, transfers, and burthens of real property or land.

At a preliminary meeting Mr. Williams read his note upon the second subject. He explained that at former meetings, the Congress had expressed itself strongly in favour of the registration of landed property and the systematic collection of facts connected with it, and regretted that, from the absence of a general national map and book of reference, England was not in a position to contribute the materials necessary for a general scheme of statistical inquiries applicable to this question, as specially recommended by the Vienna Congress. He stated the objects of registration to be to increase the security of titles and the value of real property by facilitating its transfer and encouraging its improvement, and proposed the following general propositions as worthy of support, viz.:—

1. That the establishment of a general land register in every State is highly expedient.
2. That it should be based upon a general survey and map, accompanied by a book of refeence, giving for each parcel or close of land the names of owner and occupier, the state of cultivation, and contents.
3. That the map and reference should be revised periodically, so as to represent, as nearly as possible, the actual state of the land itself.

These three propositions met with approval. Other propositions, recommending the registration of all transfers of land and mortgages, were postponed.

In the second section, Sanitary Statistics, of which Lord Shaftesbury is chairman, Dr. Farr has submitted an elaborate scheme for determining the sanitary condition as effected by circumstances of the population of different states: Dr. Sutherland similarly has put forth "Proposals for a Uniform Scheme of Sanitary Statistics," which we give in a note *; and Miss Nightingale has treated the Statistics of Hospitals.

In the third section, Industrial Statistics, as those of Manufactures, Mining, and Agriculture, of which Lord Stanley was named as president, the programme includes papers by Dr. Farr on the general subject (manufactures having been dealt with at Vienna); on Agricultural Statistics, by Mr. James Caird and the Registrar-General of Ireland; and by Mr. Robert Hunt, on Statistics of Mineral Produce, and of Mining and Metallurgical Industry. The last-named paper contains suggested points for returns respecting stone and brick.

In the Fourth Section, Commercial Statistics, presided over by Mr. Nassau W. Senior, the programme includes Statistics of Prices, and of Wages in the principal Trades, the heads of inquiry being set forth at considerable length, with suggested basis tables, by Mr. W. Newmarch; whilst Mr. J. Crawfurd shows what details will be necessary in the Statistics of Banks.

The fifth section, of which Lord Stanhope is president, includes two subdivisions,—"Census" and "Military and Naval Statistics." These heads as stated, do not show the whole importance of the subjects comprised under the section. In the programme, Enumeration of Population, and Existing Methods in connection with the Recommendations of the Congress, are treated by Mr. Hammack, and "Occupations of the People," by Dr. Farr. In the second subdivision of the programme, towards the subject of the general Statistics of the Army there is a paper by Mr. W. B. Hodge; and there are papers on the Vital Statistics of the Army, and Statistics relating to Horses, by Dr. Balfour. Let us take the last suggested head of inquiry in illustration of the importance of statistics to ourselves. Dr. Balfour remarks that a heavy item in military expenditure is that for keeping effective the horses of the cavalry and artillery. He finds the mortality, and horses "cast," making a loss in one case, in the English army, of 11·2 per cent. of the annual strength, and in the French army of 14·7 per cent. He therefore asks for a series of returns of the causes of mortality and "casting," and the ages at which these have occurred, analogous to the returns now in use for the *personnel* of the British army. The points to be comprised would be the number and ages of the horses borne on the establishment, numbers dying and "cast" in each year, and at each age; the diseases; the relative mortality of horses, geldings, and mares; the amount of sickness, with the diseases; and the annual cost. He says,—"The results would probably give rise to modifications in the stable arrangements and general management of the horses, by which these diseases might be considerably diminished in amount." Were this the place to discuss the particular subject, we could show we have some grounds for believing from observation of places in which horses of the cavalry are kept, that the modifications, as they are mildly called, are required; and that some recent questions in Parliament were not asked without reason. To continue: for the Sanitary Statistics of the Army, there is a paper by Dr. Sutherland, embodying the procedure and forms recently introduced into the British army medical department, but suggesting the tabulation of all the essential conditions to which each man is exposed during the period of his service,—as regarding the country served in, its climate, its diseases, and the habits of its inhabitants; the soldier's duty, diet, and clothing; his barrack, its position and neighbourhood; the barrack-room, the superficial area and cubic space for each soldier; the window-space and means of ventilation and warming. Dr. Sutherland proceeds:—

"We must take account of the water supply, its quantity and quality; the cleansing, drainage, and paving; the latrines, urinals, and means of ablution and bathing; the means of cooking; the expenditure of fuel; the amusements and occupations provided for the soldier, such as libraries, reading-rooms, schools, soldiers' clubs, gymnastics, work-shops, &c. We must follow the soldier into his guard-room, and examine its cubic contents, ventilation, and warming. We must go to the canteen, where he spends his spare time, and to the cell where he has to undergo confinement. We must also know the man's habits when left to himself, and his general character.

But further, the sanitary state of the hospital which the soldier enters during illness has a most important bearing on his health, and on the results of sickness. It must be submitted to an examination similar to his barrack. Its position, neighbourhood, construction, and dimensions must be examined; the dimensions of its wards, the superficial area and cubic contents for each bed, must be carefully noted; the extent of window space and its position, the means of ventilating and warming in use; the hospital appliances, water-closets, baths, ablution-rooms, kitchen, must be noted; the water supply, drainage, paving, cleansing, must all be examined, as well as any

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* *Proposals for a Uniform Scheme of Sanitary Statistics.*

1. Statistics of mortality, and causes of mortality, arranged according to age, sex, and occupation. To include not only entire towns, but districts of towns, such as wards, arrondissements, and also *culs de sac*, courts, &c.
2. The same as regards local charitable institutions, hospitals, poorhouses, schools, &c.
3. The local climate to be tabulated.
4. The geological formation, soil, and facility or otherwise of drainage.
5. The area covered by the town.
6. The length of a line enclosing this area.
7. The amount of space occupied by buildings, and the vacant area, such as squares, streets, places, &c.
8. The length of streets—
   (*a.*) Drained; (*b.*) undrained.
   (*c.*) Paved; (*d.*) unpaved.
9. The breadth of streets, with the height of the houses to the top of the front walls.
10. Number of houses.
   " of flats per house.
   " of rooms "
   " of families "
   " of windows "
11. Character of houses as to—
   (*a.*) Repair.
   (*b.*) Cleanliness.
   (*c.*) Ventilation and light.
   (*d.*) Healthiness.
12. Supply of water per head of the population; and its source from—
   (*a.*) Rivers.
   (*b.*) Lake.
   (*c.*) Shallow wells.
   (*d.*) Springs.
   (*e.*) Waterworks.
13. Consumption of—
   (*a.*) Food.
   (*b.*) Drinks, with their kinds.
14. Classification of Trades—
   " Manufactures.
   " Workshops.
15. Interments, their cost, and costs of sickness.

special peculiarities, changes, or additions which disease is apt to undergo in different hospitals; the nature and causes of hospital diseases, such as pyœmia, gangrene, fevers, &c.

These subjects of injury, so far as their results admit of the application of statistical methods, show the extent of the question of sanitary statistics as regards armies, and the importance of the results which may be expected to follow from carefully investigating them.

A separate division of the inquiry would refer to the occurrences of active field service, in which corresponding data would have to be examined.

The whole would be incomplete without taking account of the circumstances under which troops and sick are moved from place to place, marches, and their results to health, including distances and times of march. Troop transports and hospital ships, with their arrangements as to cubic space, ventilation, &c., would pass under review in this inquiry. But at this point the inquiry would merge into another most important branch, namely, Naval Sanitary Statistics."

The division of the programme, just mentioned, "Statistics of the Navy," is treated by Sir R. M. Bromley.

It is one object of statistics to collect facts and figures, after devising the means conducive to accuracy; but they would often be of comparatively little use, unless presented to the eye as by picture. Hence the value of all such aids as statistical maps. The sixth section, presided over by M. Quételét, takes cognizance of this branch of the subject, or "Statistical Methods." The importance of *notation* in a science, as observed by Dr. Farr, may be understood from the obvious results of the introduction of the Arabic numerals into arithmetic, and of the use of signs and letters in algebra and chemistry. Dr. Guy has contributed a paper on Statistical Methods and Signs, in the course of which, following upon the indicated "tabula inveniendi" of Lord Bacon, and the method in the Book of Analysis of Dr. T. J. Todd, he endeavours to show how such tables, recording, displaying, and analysing all the constituents of the compound fact, may be made the instruments of discovery. Dr. Guy, to whom many of the best arrangements for the congress are owing, also has arranged in the meeting-room of the sixth section, a considerable number of illustrations of methods of representing statistical facts. Tables in ordinary use are divided by Dr. Guy into—1. Tables of Record and Reference. 2. Tables of Illustration and Exposition; and 3. Tables of Analysis and Discovery. Dr. Guy further proposes to call certain forms "Tables of Elimination," "Tables of Identification," "Tentative Tables," and "Tables of Coincidence." The exhibition includes a number of ruled forms for the delineation of statistical facts through the medium of lines, curves, columns, squares, and other mathematical figures, or circles with radii, as well as maps. Thus there are diagrams representing the density and the proximity of the population of England and Wales in the years 1570, 1700, 1801, and 1851, by means of hexagonal divisions for the amount of ground to each person. By the addition of points in the centres of the hexagons, and lines connecting, we are able at a glance to see facts of density and proximity of houses and persons at contrasted dates. In the use of circles and radii, the latter may mark months, the circles as distant from the centre, numbers of deaths, and colours the class of diseases. Amongst the maps, the Austrian ethnographical maps; and a Swedish map, showing, besides railroad statistics, the produce of corn, whether above the necessary want, or equal to it, or below it; the wood equal to consumption; the iron ore extracted, and the works; and density of the population, are the most conspicuous. But the application of the method of representation is seen in maps (several of them English), showing the statistics of idiocy and lunacy, population, cholera, traffic along roads, and distribution of occupations in the several parts of Great Britain.

The metrical system of weights and measures is explained by a sheet of diagrams published in France, and by specimens of weights and measures themselves; and the decimal system of coinage is illustrated by specimens of the currency of certain states. There is also a large collection of publications on statistics. It is to be regretted there is no catalogue of these, and of the other portions of the exhibition.

In the programme of this sixth section, Mr. Valpy writes a paper of suggestions for an "Abstract of Principal Statistical Results for one year, to be prepared in each country, as a basis for comparative statistics;" Mr. S. Brown, one on "Units of Money, Weights and Measures;" and Mr. J. Winter Jones, one on "Statistics of Literature." In an appendix, Admiral Fitzroy gives "Suggestions intended to promote Correspondence between Meteorological Observers."

It is difficult to give by heads of subjects (which are only a selection of those which have occupied the attention of the Congresses), or by quotation from any of the papers, an idea of the course of investigation upon which every state of the civilized world will be, it is to be hoped, now actively engaged for the advancement of its people, and of other nations. The object of statistics, it is well said by Dr. Farr, is "by investigating the things of the greatest interest to nations, to promote their prosperity, and to benefit mankind. It is the study of enlightened princes, ministers, legislators, and political students; but its principles are the appanage of the people of every rank who exercise any influence in the conduct of public affairs. They should all be, in Milton's words,—

* * * "*Statists*, indeed,
And lovers of their country!"

We could have desired to ask one or two questions respecting the compilation, in the programme of the fifth section, of the list of corresponding terms for occupations, in three languages. May we say that "*éditeur*" is not French for "editor, writer," &c.; that "*architecte*" cannot represent "builder," since it is given for "architect" in another place; and that if "*maçon*" be the word for "bricklayer," "*paveur*" fails to identify "mason, pavior," as intended, or to be distinguished from the other trade? Good nomenclature will be found essential, even should it involve some correction of terms in use.

THOUGHTS IN THE STREETS.

PATERNOSTER-ROW.

EVERY one takes his own particular view of the metropolis. The antiquary, besides stately Westminster Abbey, the massive tower, and other old buildings, notes in nooks and corners things of great value which many would overlook. The man of commerce lingers amongst the vessels in the river,—a fleet,—the warehouses to which the products of the world, of costly kind, have been brought, and takes an interest in buildings which may possess no great external attractions, but where operations are carried forward which have influence in shaking or establishing thrones and kingdoms. The military man, comparatively heedless of other matters, wanders to the neighbouring arsenals, inspecting the vast stores of arms, the preparation of the munitions of war, and the making of those "arms of precision" which will pave the way, although by present deadly effects, to a more intelligent manner of contest between nations. The medical professor, the lawyer, and the man of letters, have each their peculiar views. The mechanist finds pleasure and instruction in spots which others would pass over without note. The artist has his views. He sees the phases of this great life-mass according to the guidance of his fancy; and the tasteful architect, in his way, looks with feelings of mingled satisfaction and regret at the marvellous extent of the work of human hands which covers so many miles of space. Fewer look at it as a whole—as the home of nearly 3,000,000 of inhabitants, and as the great centre of the world's civilization.

Viewed from the highest points of sight, from Highgate or Hampstead, the Monument, or the upper gallery of St. Paul's Cathedral, even when the atmosphere is clear, the extent of London is such that great districts teeming with life vanish into a hazy distance, which prevents any complete picture. Seen from over the dome of St. Paul's the appearance is singular. The men and women, the horses and carriages, appear like mere specks. The houses and buildings are dwarfed to the size of children's toys. That moving figure which looks like a pigmy in contrast with the great statues on Wren's church, may be a lord mayor of London, a capitalist whose means are boundless, a chief minister of State, or one of those lions of literature who have a world-wide fame. How small is the figure in comparison with the extent and movement around! How great is the praise due to those who, amongst such a multitude, rise to distinction! Many thoughts are caused by the sights presented from this spot, and the mind forms pictures of times gone by, running over 2,000 years, during which the capital has been growing to its present size.

There are some sights in London which are familiar to most visitors. The venerable Abbey, the palace of the Parliament, the galleries of pictures, sculptures and antiquities, the parks, St. Paul's, Gog and Magog, the Thames Tunnel, Greenwich Hospital, and the public offices, are looked at by most strangers, be they hurried as they may, and who generally leave in a bewildered state in consequence. Nor is this surprising when those who have made the various parts of the metropolis a study for a life, each day wonder afresh at its marvels. By constantly looking at it, the huge whole seems to expand, and important interests, powerful operations, which were at first invisible, become evident.

Like the ebb and flow of the tide, streams of men and women, of various grades, move in all directions at all hours of the day (unhappy is the wanderer in this flood of human life who has no object in view), and this to our fancy is one of the most remarkable sights of London. What variety of condition, how strange the difference amongst so many countenances. Here the prosperous gentleman or gentlewoman elbows the struggling and needy passenger, doubtfully endeavouring to obtain the commonest necessaries of life. Isolated as each seems, many are more dependent on, and connected with, the other than may be thought. Most have their cares, and there are few even amongst the most humble but have a circle of greater or less size and influence, to whom even in the bustle of business, the thoughts revert, and to whom they look for sympathy and pleasure.

The great thoroughfares are crowded: statisticians would be puzzled to estimate the value of what is borne along in the roadways. A single van may contain from 10,000*l.* to 15,000*l.* worth of silk, or other costly wares; and that meek-looking, ill-clad individual, whom you jostled just now on the pavement, may be revolving an idea which, when it becomes a fact, may give employment and bread to thousands, and advance the interests of the whole human family. There is raw material *yet* in London for a great poet to work into a great poem, developing the lights and shades of this mighty metropolis.

Getting out of the stream, accident has led us into Paternoster-row. World-wide as is the fame of this locality in connection with the publishing trade, it has not long been such an important mart as it now is for the sale of literary productions. Stow says that in 1549, when the chapel had been pulled down which had been built on the site of the old charnel house, several dwelling-houses and warehouses were built in its stead, and sheds before them for stationers. On this occasion Wolfe paid for removing 1,000 loads of bones to Finsbury-field. But few names of publishers are met with as carrying on business in Paternoster-row before the fire of 1666: one of these is "R. Harford, in Queen's-head-alley, Paternoster-row, 1642," and another, "Christopher Meredith, Crane-alley, Paternoster-row." Ivy-lane, Cheapside, Ave Maria-lane, were much occupied by booksellers and printers. Caxton (citizen and mercer) had a shop for the sale of books, &c., in Fleet-street. He was succeeded by Wynkin de Worde, who, in his last will, 1545, calls himself "citizen and stationer." The following were also contemporary printers in Fleet-street, viz., Robert Copland, stationer, printer, bookseller, author, and translator; his sign in 1515 was the rose garland; he died about 1547: John Butler lived at the sign of St. John the Evangelist, in Fleet-street, in 1529: Thomas Bertholit, king's printer, dwelt at the Lucretia Romana, in Fleet-street; he retired from business about 1541: John Bedel, stationer and printer, lived in 1531 at the sign of Our Lady of Pity, in Fleet-street: John Waylond, citizen and stationer, lived at the Blue Garland, in Fleet-street, 1541: Lawrence Andrew, a native of Calais, was a printer at the Golden Press, by Fleet-bridge.

From Fleet-street several of the succeeding printers removed to St. Paul's-churchyard, and some were settled there at an almost equally early date. Julien Notary, in 1512, lived in St. Paul's-churchyard, near the west door, by my lord of London's palace, at the sign of the Three Kings.

Books printed by him occur from the year 1527 to 1544. Robert Foy lived at the Bell, in St. Paul's-churchyard; he died in 1566. Thomas Petit lived at the sign of the Maiden's Head, in St. Paul's-churchyard, about 1538; Thomas Ragland lived in St. Andrew's, in the Wardrobe, and kept a shop in St. Paul's-churchyard from 1544 to 1548. Reginald Wolfe, a native of Switzerland, was a man of learning, and brought up to the profession of a printer. This was the printer who removed the bones alluded to; he was Archbishop Cranmer's publisher, and publisher of other books appointed for the use of the Church; he was also a great collector of English history, which was afterwards digested and printed by Hollingshed. Most of the printers who published theological books had religious signs. Henry Petwell's sign was the Trinity, in St. Paul's-churchyard; he was buried in St. Faith's Church, under St. Paul's. John Joy had the sign of St. Nicholas, in St. Paul's-churchyard; and John Caward, who published some of Bishop Bonner's works, had the sign of the Holy Ghost, in St. Paul's-churchyard. Rivington's house, which ever since the Fire of London has been noticed for the publication of works on divinity, still retains the sign of the Bible and Crown.

Thomas Godfrey, the printer of Chaucer's works, lived near the Temple-bar; and Robert Wyer, an early printer, lived at the sign of St. John the Evangelist, in the Bishop of Norwich's rents, beside Charing-cross.

THE WANTS OF THE ARTISAN IN LONDON.

THE circumstance, that in this huge population of London, education, both artistic and otherwise, is not sufficient for the need, must be evident to all who have carefully considered this most important subject.

In a former article in the *Builder* we have shown how an immense number of the youth of modern London are springing up to a certain extent a deteriorated class, and we wish most earnestly now to hint how matters may be improved.

Let us once more mention that the present population of London is more than *two millions and a half, and that if the same increase of population go on*, in A.D. 1900 we shall have five millions of people in this metropolis; and the question is, whether a large portion of this multitude shall grow up as little profitable as the weeds of the fields, or be manufactured into a useful and profitable material.

No words that we can use can sufficiently express our appreciation of the value of that education which is gathered after leaving the ordinary schools, and yet how few have been the efforts made to form institutions in this great place to meet the urgent demand.

We hear constantly in the provinces (in small towns even) of buildings called Lyceums, and what not, having sprung up for the avowed purpose of providing the industrious classes with the means of intellectual improvement; and yet, notwithstanding this example, and the evident good which has resulted from such steps, little of the same kind is done in London.

In the days of Queen Elizabeth, when this country took a step onward, many schools were established which, according to the population at that time, were sufficient for the purpose of supplying useful knowledge to those who required help. Some of those schools then endowed have now risen to such prosperity that they are no longer available to the poorer part of the population.

In Elizabeth's reign, London grew so much that the greatest alarm was felt in consequence, and vigorous means were adopted to improve the knowledge of the citizens. Since that time never has the necessity for the most strenuous exertions been so apparent as at the present day.

In Islington, Somers-town, Camden-town, and other districts, there are no institutions which are available to the humbler classes, and the consesequence is, that many a promising youth is lost for the want of opportunities. The only way to tackle with this evil is to take London into pieces, and look upon each portion as a distinct town or city which needs its Athenæum, Lyceum, or Mechanics' Institute, where young men may obtain useful books, and at the same time have an opportunity of joining classes composed of men of similar taste and pursuits, and in some cases obtaining the encouragement which is derived from the praise he would have from his fellows.

At the present time in London, throughout miles of streets, there are no places in which the young workmen can, at a moderate cost, obtain the culture which would be valuable to him in life. Lord Stanley some time ago, at the opening of the new Institution at Oldham, remarked, with great truth, "that the establishment of an Athenæum, an Institute, a Lyceum, in every large town in England, call it what you will, is no longer a mere luxury which may be enjoyed or dispensed with at pleasure, but has become an essential part of our social organization." He also said, "that a man may leave either of the great Universities, after a school and college, which together have extended over ten years, an accomplished classic, an able mathematician, yet be wholly unacquainted with external nature, ignorant of the principle on which a common steam-engine is constructed, ignorant even of the mechanism which he carries with him in his own body, and utterly unversed in that law of the land under which he lives."

This acknowledgment that after a course of our highest system of education, it is necessary to go to school again, and learn the useful knowledge of every-day life, shows the need which must exist for the improvement of a large number of our artisans, who have had only the most imperfect training.

PROPOSED MEMORIAL OF THE LATE SIR CHARLES BARRY.

WE are glad to find that our views on this subject are likely to be carried out. A deputation from a committee of the Institute of Architects had an interview a few days ago with Lord Palmerston, to urge the propriety of erecting a statue of the late Sir Charles Barry in some convenient part of his great work at Westminster. The premier, we understand, acquiesced fully, and, moreover, when it was suggested that the Government should undertake the duty, expressed his personal willingness that it should be so. The site spoken of is the top of the flight of steps at the end of Westminster Hall, under the large window put in by Barry, and where, indeed, his work, it may be said, commences.

The Art Union of London, being about to commission the execution of a medal commemorative of an architect for their medallic series, have determined on appropriating it to Sir Charles Barry, who was for many years one of the council of the society.

PROPOSED MEMORIAL OF THE LATE A. W. PUGIN.

WE mentioned last month that a committee had been formed to raise a travelling fund as a memorial of the late Mr. A. W. Pugin. It has since appeared that some of his friends were contemplating a more personal memorial. On the 14th inst., in consequence, a conference was held for the purpose of receiving mutual explanations, when the following resolution was agreed upon:—

"That as the utmost unanimity is essential to ensure the successful carrying out of the above object, on which two bodies of gentlemen are from accidental circumstances engaged, it is expedient that immediate measures be taken to promote the amalgamation of the two; any decision as to the appropriation of the funds to be raised being left to the united body, or to a committee to be appointed by them."

On Thursday last a meeting was held in the rooms of the Royal Institute of Architects, to take the matter into consideration.

INLAID SLAB-TOMBS.

THE brief mention in our last of the incised tablet erected under the direction of Mr. James M. Lockyer, in the church at Moulsham, does not give a correct idea of it. The slab is of Sicilian marble, 7 feet 6 inches by 4 feet 4 inches, incised to an average depth of one-sixteenth of an inch, deeper in the large surfaces, less in the fine lines, and slightly undercut, to afford a better hold for the inlay, which is a fine scagliola. It was found necessary to polish the marble before the scagliola was introduced. The former being so much harder, required an amount of friction and force in the polishing which would have destroyed and hollowed out the softer surface of the inlay. Two shafts of columns (which support a foliated arch), the narrow bands round the border, the fields of the quatrefoils (in the spandrils), and the cross, are inlaid with a green serpentine, the remainder with a black, and the whole, being highly polished, presents exactly the appearance of being entirely of marble.

The perspective effect given to the border *at the bottom* should have been continued round, if introduced at all. It is, nevertheless, a very interesting work. The architect says on the subject:—"Slab-tombs and pavements inlaid in this manner are of common occurrence in Italy and France; but generally, if not invariably, in the latter country, are of a dull, unpolished stone and cement. In Italy, I have, however, found examples in marble, the whole polished, and have no doubt that the material used was a scagliola, and not a mastic, as Viollet le Duc supposes. Some of the slab tombs in Florence are very elegant, and as most of these works date from not later than the fifteenth century, it is evident that the inlay (which in many places is exposed to the action of the atmosphere, and in others to the wear of foot passengers) is sufficiently indestructible and imperishable to entitle it to more frequent use; nor is it so expensive as one would imagine; the total cost of this slab, including the cost of carriage thirty miles from London, and fixing, being only 58*l*."

THE ARRANGEMENT OF MODEL WAREHOUSES.

I REMEMBER once hearing an eminent divine* express himself as follows:—"When I hear any one allege that he has discovered in the Scriptures a new article of faith, I set him down for a fool, because the field of doctrines has long since been thoroughly explored and exhausted; but did he profess to have discovered some new application of Christianity to the improvement of society, I would listen; for the time will never arrive when the Christian religion, in reference to what it suggests and inculcates for the social happiness of man, is not in advance of every specimen of human society found in the world."

It is some such feeling as is here expressed that leads me to give an account of what I call 'A Model Warehouse,' that is, a warehouse the management of which has been devised and is carried on in a spirit of benevolence; and yet the description I shall give will, I doubt not, be only a remote approximation to the standard that may in time be attained.

Happening to be in Nottingham last summer, I paid a visit to the new lace warehouse, Stoney-street, occupied by Messrs. Thos. Adams and Co. Here may be seen at work some hundreds of women; and I could not help being struck with many things in this establishment as presenting a very favourable contrast to what I had heard of women's work-rooms in London and elsewhere. The building faces the east, presents a handsome façade about 120 feet in length, consists of cellar and five stories, including the attic, and has, projecting from the centre behind, a narrow wing of the same number of stories. A visitor, on entering from the street, finds himself in a well-lighted, spacious room, whose area is 10,200 feet, and the cubic air space 132,500 feet: the area of the next story is 9,100 feet, the cubic air space 117,185 feet.†

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There is gas in all the rooms, and when it is lighted, ventilation, in addition to what the windows afford, is sought by openings near the ceiling leading into flues in the walls. In the top rooms the ceiling is perforated by large zinc pipes, which run out some feet above the roof, and are found to improve the ventilation. When I again refer to gas-lighting, I shall have occasion to point out the insufficiency of these and all other modes hitherto adopted for carrying off the polluted atmosphere generated in the combustion of gas in offices and warehouses.

In addition to three stone staircases, each running the whole height of the building, the several stories are communicated with by a powerful hydraulic hoist, by which the heavy goods, and occasionally the workpeople, are carried up and down.

The *Latrines* are well placed. In a small room entered from each landing of the outside stair, marked A, are a closet, urinal, and lavatory; and behind the same staircase, I may just observe

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special peculiarities, changes, or additions which disease is apt to undergo in different hospitals; the nature and causes of hospital diseases, such as pyœmia, gangrene, fevers, &c.

These subjects of injury, so far as their results admit of the application of statistical methods, show the extent of the question of sanitary statistics as regards armies, and the importance of the results which may be expected to follow from carefully investigating them.

A separate division of the inquiry would refer to the occurrences of active field service, in which corresponding data would have to be examined.

The whole would be incomplete without taking account of the circumstances under which troops and sick are moved from place to place, marches, and their results to health, including distances and times of march. Troop transports and hospital ships, with their arrangements as to cubic space, ventilation, &c., would pass under review in this inquiry. But at this point the inquiry would merge into another most important branch, namely, Naval Sanitary Statistics."

The division of the programme, just mentioned, "Statistics of the Navy," is treated by Sir R. M. Bromley.

It is one object of statistics to collect facts and figures, after devising the means conducive to accuracy; but they would often be of comparatively little use, unless presented to the eye as by picture. Hence the value of all such aids as statistical maps. The sixth section, presided over by M. Quételét, takes cognizance of this branch of the subject, or "Statistical Methods." The importance of *notation* in a science, as observed by Dr. Farr, may be understood from the obvious results of the introduction of the Arabic numerals into arithmetic, and of the use of signs and letters in algebra and chemistry. Dr. Guy has contributed a paper on Statistical Methods and Signs, in the course of which, following upon the indicated "tabula inveniendi" of Lord Bacon, and the method in the Book of Analysis of Dr. T. J. Todd, he endeavours to show how such tables, recording, displaying, and analysing all the constituents of the compound fact, may be made the instruments of discovery. Dr. Guy, to whom many of the best arrangements for the congress are owing, also has arranged in the meeting-room of the sixth section, a considerable number of illustrations of methods of representing statistical facts. Tables in ordinary use are divided by Dr. Guy into—1. Tables of Record and Reference. 2. Tables of Illustration and Exposition; and 3. Tables of Analysis and Discovery. Dr. Guy further proposes to call certain forms "Tables of Elimination," "Tables of Identification," "Tentative Tables," and "Tables of Coincidence." The exhibition includes a number of ruled forms for the delineation of statistical facts through the medium of lines, curves, columns, squares, and other mathematical figures, or circles with radii, as well as maps. Thus there are diagrams representing the density and the proximity of the population of England and Wales in the years 1570, 1700, 1801, and 1851, by means of hexagonal divisions for the amount of ground to each person. By the addition of points in the centres of the hexagons, and lines connecting, we are able at a glance to see facts of density and proximity of houses and persons at contrasted dates. In the use of circles and radii, the latter may mark months, the circles as distant from the centre, numbers of deaths, and colours the class of diseases. Amongst the maps, the Austrian ethnographical maps; and a Swedish map, showing, besides railroad statistics, the produce of corn, whether above the necessary want, or equal to it, or below it; the wood equal to consumption; the iron ore extracted, and the works; and density of the population, are the most conspicuous. But the application of the method of representation is seen in maps (several of them English), showing the statistics of idiocy and lunacy, population, cholera, traffic along roads, and distribution of occupations in the several parts of Great Britain.

The metrical system of weights and measures is explained by a sheet of diagrams published in France, and by specimens of weights and measures themselves; and the decimal system of coinage is illustrated by specimens of the currency of certain states. There is also a large collection of publications on statistics. It is to be regretted there is no catalogue of these, and of the other portions of the exhibition.

In the programme of this sixth section, Mr. Valpy writes a paper of suggestions for an "Abstract of Principal Statistical Results for one year, to be prepared in each country, as a basis for comparative statistics;" Mr. S. Brown, one on "Units of Money, Weights and Measures;" and Mr. J. Winter Jones, one on "Statistics of Literature." In an appendix, Admiral Fitzroy gives "Suggestions intended to promote Correspondence between Meteorological Observers."

It is difficult to give by heads of subjects (which are only a selection of those which have occupied the attention of the Congresses), or by quotation from any of the papers, an idea of the course of investigation upon which every state of the civilized world will be, it is to be hoped, now actively engaged for the advancement of its people, and of other nations. The object of statistics, it is well said by Dr. Farr, is "by investigating the things of the greatest interest to nations, to promote their prosperity, and to benefit mankind. It is the study of enlightened princes, ministers, legislators, and political students; but its principles are the appanage of the people of every rank who exercise any influence in the conduct of public affairs. They should all be, in Milton's words,—

> * * * "*Statists*, indeed,
> And lovers of their country!"

We could have desired to ask one or two questions respecting the compilation, in the programme of the fifth section, of the list of corresponding terms for occupations, in three languages. May we say that "*éditeur*" is not French for "editor, writer," &c.; that "*architecte*" cannot represent "builder," since it is given for "architect" in another place; and that if "*maçon*" be the word for "bricklayer," "*paveur*" fails to identify "mason, pavior," as intended, or to be distinguished from the other trade? Good nomenclature will be found essential, even should it involve some correction of terms in use.

THOUGHTS IN THE STREETS.

PATERNOSTER-ROW.

EVERY one takes his own particular view of the metropolis. The antiquary, besides stately Westminster Abbey, the massive tower, and other old buildings, notes in nooks and corners things of great value which many would overlook. The man of commerce lingers amongst the vessels in the river,—a fleet,—the warehouses to which the products of the world, of costly kind, have been brought, and takes an interest in buildings which may possess no great external attractions, but where operations are carried forward which have influence in shaking or establishing thrones and kingdoms. The military man, comparatively heedless of other matters, wanders to the neighbouring arsenals, inspecting the vast stores of arms, the preparation of the munitions of war, and the making of those "arms of precision" which will pave the way, although by present deadly effects, to a more intelligent manner of contest between nations. The medical professor, the lawyer, and the man of letters, have each their peculiar views. The mechanist finds pleasure and instruction in spots which others would pass over without note. The artist has his views. He sees the phases of this great life-mass according to the guidance of his fancy; and the tasteful architect, in his way, looks with feelings of mingled satisfaction and regret at the marvellous extent of the work of human hands which covers so many miles of space. Fewer look at it as a whole—as the home of nearly 3,000,000 of inhabitants, and as the great centre of the world's civilization.

Viewed from the highest points of sight, from Highgate or Hampstead, the Monument, or the upper gallery of St. Paul's Cathedral, even when the atmosphere is clear, the extent of London is such that great districts teeming with life vanish into a hazy distance, which prevents any complete picture. Seen from over the dome of St. Paul's the appearance is singular. The men and women, the horses and carriages, appear like mere specks. The houses and buildings are dwarfed to the size of children's toys. That moving figure which looks like a pigmy in contrast with the great statues on Wren's church, may be a lord mayor of London, a capitalist whose means are boundless, a chief minister of State, or one of those lions of literature who have a world-wide fame. How small is the figure in comparison with the extent and movement around! How great is the praise due to those who, amongst such a multitude, rise to distinction! Many thoughts are caused by the sights presented from this spot, and the mind forms pictures of times gone by, running over 2,000 years, during which the capital has been growing to its present size.

There are some sights in London which are familiar to most visitors. The venerable Abbey, the palace of the Parliament, the galleries of pictures, sculptures and antiquities, the parks, St. Paul's, Gog and Magog, the Thames Tunnel, Greenwich Hospital, and the public offices, are looked at by most strangers, be they hurried as they may, and who generally leave in a bewildered state in consequence. Nor is this surprising when those who have made the various parts of the metropolis a study for a life, each day wonder afresh at its marvels. By constantly looking at it, the huge whole seems to expand, and important interests, powerful operations, which were at first invisible, become evident.

Like the ebb and flow of the tide, streams of men and women, of various grades, move in all directions at all hours of the day (unhappy is the wanderer in this flood of human life who has no object in view), and this to our fancy is one of the most remarkable sights of London. What variety of condition, how strange the difference amongst so many countenances. Here the prosperous gentleman or gentlewoman elbows the struggling and needy passenger, doubtfully endeavouring to obtain the commonest necessaries of life. Isolated as each seems, many are more dependent on, and connected with, the other than may be thought. Most have their cares, and there are few even amongst the most humble but have a circle of greater or less size and influence, to whom even in the bustle of business, the thoughts revert, and to whom they look for sympathy and pleasure.

The great thoroughfares are crowded: statisticians would be puzzled to estimate the value of what is borne along in the roadways. A single van may contain from 10,000*l.* to 15,000*l.* worth of silk, or other costly wares; and that meek-looking, ill-clad individual, whom you jostled just now on the pavement, may be revolving an idea which, when it becomes a fact, may give employment and bread to thousands, and advance the interests of the whole human family. There is raw material *yet* in London for a great poet to work into a great poem, developing the lights and shades of this mighty metropolis.

Getting out of the stream, accident has led us into Paternoster-row. World-wide as is the fame of this locality in connection with the publishing trade, it has not long been such an important mart as it now is for the sale of literary productions. Stow says that in 1549, when the chapel had been pulled down which had been built on the site of the old charnel house, several dwelling-houses and warehouses were built in its stead, and sheds before them for stationers. On this occasion Wolfe paid for removing 1,000 loads of bones to Finsbury-field. But few names of publishers are met with as carrying on business in Paternoster-row before the fire of 1666: one of these is "R. Harford, in Queen's-head-alley, Paternoster-row, 1642," and another, "Christopher Meredith, Crane-alley, Paternoster-row." Ivy-lane, Cheapside, Ave Maria-lane, were much occupied by booksellers and printers. Caxton (citizen and mercer) had a shop for the sale of books, &c., in Fleet-street. He was succeeded by Wynkin de Worde, who, in his last will, 1545, calls himself "citizen and stationer." The following were also contemporary printers in Fleet-street, viz., Robert Copland, stationer, printer, bookseller, author, and translator; his sign in 1515 was the rose garland; he died about 1547: John Butler lived at the sign of St. John the Evangelist, in Fleet-street, in 1529: Thomas Bertholit, king's printer, dwelt at the Lucretia Romana, in Fleet-street; he retired from business about 1541: John Bedel, stationer and printer, lived in 1531 at the sign of Our Lady of Pity, in Fleet-street: John Waylond, citizen and stationer, lived at the Blue Garland, in Fleet-street, 1541: Lawrence Andrew, a native of Calais, was a printer at the Golden Press, by Fleet-bridge.

From Fleet-street several of the succeeding printers removed to St. Paul's-churchyard, and some were settled there at an almost equally early date. Julien Notary, in 1512, lived in St. Paul's-churchyard, near the west door, by my lord of London's palace, at the sign of the Three Kings.

Books printed by him occur from the year 1527 to 1544. Robert Foy lived at the Bell, in St. Paul's-churchyard; he died in 1566. Thomas Petit lived at the sign of the Maiden's Head, in St. Paul's-churchyard, about 1538; Thomas Ragland lived in St. Andrew's, in the Wardrobe, and kept a shop in St. Paul's-churchyard from 1544 to 1548. Reginald Wolfe, a native of Switzerland, was a man of learning, and brought up to the profession of a printer. This was the printer who removed the bones alluded to; he was Archbishop Cranmer's publisher, and publisher of other books appointed for the use of the Church; he was also a great collector of English history, which was afterwards digested and printed by Hollingshed. Most of the printers who published theological books had religious signs. Henry Petwell's sign was the Trinity, in St. Paul's-churchyard; he was buried in St. Faith's Church, under St. Paul's. John Joy had the sign of St. Nicholas, in St. Paul's-churchyard; and John Caward, who published some of Bishop Bonner's works, had the sign of the Holy Ghost, in St. Paul's-churchyard. Rivington's house, which ever since the Fire of London has been noticed for the publication of works on divinity, still retains the sign of the Bible and Crown.

Thomas Godfrey, the printer of Chaucer's works, lived near the Temple-bar; and Robert Wyer, an early printer, lived at the sign of St. John the Evangelist, in the Bishop of Norwich's rents, beside Charing-cross.

THE WANTS OF THE ARTISAN IN LONDON.

THE circumstance, that in this huge population of London, education, both artistic and otherwise, is not sufficient for the need, must be evident to all who have carefully considered this most important subject.

In a former article in the *Builder* we have shown how an immense number of the youth of modern London are springing up to a certain extent a deteriorated class, and we wish most earnestly now to hint how matters may be improved.

Let us once more mention that the present population of London is more than *two millions and a half, and that if the same increase of population go on*, in A.D. 1900 we shall have five millions of people in this metropolis; and the question is, whether a large portion of this multitude shall grow up as little profitable as the weeds of the fields, or be manufactured into a useful and profitable material.

No words that we can use can sufficiently express our appreciation of the value of that education which is gathered after leaving the ordinary schools, and yet how few have been the efforts made to form institutions in this great place to meet the urgent demand.

We hear constantly in the provinces (in small towns even) of buildings called Lyceums, and what not, having sprung up for the avowed purpose of providing the industrious classes with the means of intellectual improvement; and yet, notwithstanding this example, and the evident good which has resulted from such steps, little of the same kind is done in London.

In the days of Queen Elizabeth, when this country took a step onward, many schools were established which, according to the population at that time, were sufficient for the purpose of supplying useful knowledge to those who required help. Some of those schools then endowed have now risen to such prosperity that they are no longer available to the poorer part of the population.

In Elizabeth's reign, London grew so much that the greatest alarm was felt in consequence, and vigorous means were adopted to improve the knowledge of the citizens. Since that time never has the necessity for the most strenuous exertions been so apparent as at the present day.

In Islington, Somers-town, Camden-town, and other districts, there are no institutions which are available to the humbler classes, and the consequence is, that many a promising youth is lost for the want of opportunities. The only way to tackle with this evil is to take London into pieces, and look upon each portion as a distinct town or city which needs its Athenæum, Lyceum, or Mechanics' Institute, where young men may obtain useful books, and at the same time have an opportunity of joining classes composed of men of similar taste and pursuits, and in some cases obtaining the encouragement which is derived from the praise he would have from his fellows.

At the present time in London, throughout miles of streets, there are no places in which the young workmen can, at a moderate cost, obtain the culture which would be valuable to him in life. Lord Stanley some time ago, at the opening of the new Institution at Oldham, remarked, with great truth, "that the establishment of an Athenæum, an Institute, a Lyceum, in every large town in England, call it what you will, is no longer a mere luxury which may be enjoyed or dispensed with at pleasure, but has become an essential part of our social organization." He also said, "that a man may leave either of the great Universities, after a school and college, which together have extended over ten years, an accomplished classic, an able mathematician, yet be wholly unacquainted with external nature, ignorant of the principle on which a common steam-engine is constructed, ignorant even of the mechanism which he carries with him in his own body, and utterly unversed in that law of the land under which he lives."

This acknowledgment that after a course of our highest system of education, it is necessary to go to school again, and learn the useful knowledge of every-day life, shows the need which must exist for the improvement of a large number of our artisans, who have had only the most imperfect training.

PROPOSED MEMORIAL OF THE LATE SIR CHARLES BARRY.

WE are glad to find that our views on this subject are likely to be carried out. A deputation from a committee of the Institute of Architects had an interview a few days ago with Lord Palmerston, to urge the propriety of erecting a statue of the late Sir Charles Barry in some convenient part of his great work at Westminster. The premier, we understand, acquiesced fully, and, moreover, when it was suggested that the Government should undertake the duty, expressed his personal willingness that it should be so. The site spoken of is the top of the flight of steps at the end of Westminster Hall, under the large window put in by Barry, and where, indeed, his work, it may be said, commences.

The Art Union of London, being about to commission the execution of a medal commemorative of an architect for their medallic series, have determined on appropriating it to Sir Charles Barry, who was for many years one of the council of the society.

PROPOSED MEMORIAL OF THE LATE A. W. PUGIN.

WE mentioned last month that a committee had been formed to raise a travelling fund as a memorial of the late Mr. A. W. Pugin. It has since appeared that some of his friends were contemplating a more personal memorial. On the 14th inst., in consequence, a conference was held for the purpose of receiving mutual explanations, when the following resolution was agreed upon:—

"That as the utmost unanimity is essential to ensure the successful carrying out of the above object, on which two bodies of gentlemen are from accidental circumstances engaged, it is expedient that immediate measures be taken to promote the amalgamation of the two; any decision as to the appropriation of the funds to be raised being left to the united body, or to a committee to be appointed by them."

On Thursday last a meeting was held in the rooms of the Royal Institute of Architects, to take the matter into consideration.

INLAID SLAB-TOMBS.

THE brief mention in our last of the incised tablet erected under the direction of Mr. James M. Lockyer, in the church at Moulsham, does not give a correct idea of it. The slab is of Sicilian marble, 7 feet 6 inches by 4 feet 4 inches, incised to an average depth of one-sixteenth of an inch, deeper in the large surfaces, less in the fine lines, and slightly undercut, to afford a better hold for the inlay, which is a fine scagliola. It was found necessary to polish the marble before the scagliola was introduced. The former being so much harder, required an amount of friction and force in the polishing which would have destroyed and hollowed out the softer surface of the inlay. Two shafts of columns (which support a foliated arch), the narrow bands round the border, the fields of the quatrefoils (in the spandrils), and the cross, are inlaid with a green serpentine, the remainder with a black, and the whole, being highly polished, presents exactly the appearance of being entirely of marble.

The perspective effect given to the border *at the bottom* should have been continued round, if introduced at all. It is, nevertheless, a very interesting work. The architect says on the subject:—"Slab-tombs and pavements inlaid in this manner are of common occurrence in Italy and France; but generally, if not invariably, in the latter country, are of a dull, unpolished stone and cement. In Italy, I have, however, found examples in marble, the whole polished, and have no doubt that the material used was a scagliola, and not a mastic, as Viollet le Duc supposes. Some of the slab tombs in Florence are very elegant, and as most of these works date from not later than the fifteenth century, it is evident that the inlay (which in many places is exposed to the action of the atmosphere, and in others to the wear of foot passengers) is sufficiently indestructible and imperishable to entitle it to more frequent use; nor is it so expensive as one would imagine; the total cost of this slab, including the cost of carriage thirty miles from London, and fixing, being only 58*l*."

THE ARRANGEMENT OF MODEL WAREHOUSES.

I REMEMBER once hearing an eminent divine* express himself as follows:—"When I hear any one allege that he has discovered in the Scriptures a new article of faith, I set him down for a fool, because the field of doctrines has long since been thoroughly explored and exhausted; but did he profess to have discovered some new application of Christianity to the improvement of society, I would listen; for the time will never arrive when the Christian religion, in reference to what it suggests and inculcates for the social happiness of man, is not in advance of every specimen of human society found in the world."

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(though not marked in the plan), there are various rooms used as library, class-room, &c.

The women occupy portions of every flat, excepting that on which is the sale-room. The room which, in proportion to its area, contains the greatest number, is 69 feet long, 31 wide, and 12 high. Here forty-four girls work; yet in this, the most crowded apartment in the warehouse, the cubic air space for each girl is 581 feet, an allowance, though not more than sufficient for health, vastly greater, we shall find, than exists in most of our warehouse work-rooms. The happy, comfortable look of the women impressed me much. The weather at my visit was warm, but the rooms were all well ventilated by open windows. I remember remarking to an attendant, after walking amongst the girls from room to room,—"Why these women look almost as fresh and healthy as if they were hay-making!"

When I had completed my survey, Mr. Adams said to me that perhaps I would like to meet the hands at prayer next morning. To this I assented, and accordingly was with them at the door of the little chapel, which is behind the warehouse, as the clock struck eight. On entering, I walked to the further extremity, and sat down near the chaplain's desk. In about a minute the master, Mr. Adams, entered and took his seat, which is by the door, and a multitude of the people, the majority females, flocked in. A hymn commenced, accompanied by the sound of a neat organ, purchased for the chapel by the contributions of the hands; and at five minutes past eight the door was shut, so that none after that came in. The service consists of singing, brief prayers, with the reading and exposition of a portion of Scripture, the time occupied altogether being limited to twenty minutes, a portion of the day not deducted from the time of the hands, but given them by their employer. The scene was very impressive, and the service so wisely conducted as to be without weariness even to the youngest present; and when I saw Mr. Adams seat himself with a look of paternal benignity, and unite with his workpeople in seeking a blessing ere commencing the labours of the day, I felt that here was the recognition of a bond of brotherhood which as yet is too little regarded in the world.

By the kindness of the Rev. Edward Davies, chaplain to the warehouse, I was furnished last December with information in answer to queries respecting a number of points, and this I give chiefly in his own words. It will show how valuable are the services of this devoted gentleman, who, in the best sense of the word, may be pronounced the workpeople's FRIEND.

"1. The number of hands in the warehouse is about 410: of these about 330 are females, sixty of whom are under the age of fifteen. We have no definite age at which young persons are admitted. We should not scruple to receive them at any age, provided they were able to do the work, which is always light, and not unfrequently pleasing to a child. Our reason for this is, that if we do not take them, they are thrust into 'dame houses,' that is, into the little and not unusually dirty houses of the 'middle' women, who do lace-work in their homes, where they are at times exposed to harsh treatment, and are commonly kept at work at unreasonable hours. I have seen little ones at work in these places when not more than eight years old. They cannot do our work until they are about eleven, so that it is a rare thing to see one among us younger: and then all our children under fifteen years are *required* to attend the night-school, where they are taught to read and write. Out of the sixty young ones there is not one who does not attend a Sunday School, and that without any direct pressure on my part. They are most of them under the influence of kind, motherly overlookers, which is a matter of great importance.

2. Our daily service in the chapel lasts twenty minutes, and the average attendance is 365. In the winter time we commence half an hour later than in summer, so that the people in the former season get to work by about five minutes to nine.

3. The hands go to dinner at one o'clock, and return at two. Seven o'clock is the common hour for leaving. In busy times they work until eight, when the *warehouse is closed*. We are gradually shortening the hours of labour. I speak of the females now, for all the males, with very few exceptions, leave at six o'clock every evening.

4. There is a tea-room, but for the males only. Tea is provided for them at the expense of the firm,—the hour five o'clock,—and twenty minutes is the time usually taken. We have not, at present, a 'girls' tea-room, but hope to have in a little time. They take tea in their own work-rooms,—the hour, five to half-past.

5. There is ready access to pure drinking-water in every story. Two years ago the public company's water was used; but not liking it, we sank a shaft within our yard, and obtain excellent drinking water, which is constantly distributed over the warehouse by means of the engine.

6. The school-room is open every evening in the week. On Monday is the meeting of the 'Mutual Improvement Society,' attended by the youths, nineteen members, who read papers of their own preparing, chiefly on moral or religious subjects. On Tuesday evening we have a reading and writing class for grown females, numbering about fifty. On Wednesday and Friday are reading and writing classes for children, all females: we have no *young* boys in the warehouse. Thursday we have a meeting of the Choral Union: this is a most promising society, composed entirely of our own people. On Saturday the warehouse closes at five, and on that evening I have a Bible class for the youths at my house, attended by about ten of them. We receive the girls into the children's school until they are about fifteen, after which they have the privilege of attending the young women's class.

7. The sick are always visited by me at their homes, whether male or female. Last week I had four on my list, one of whom, a female, died. My visits are gratefully received. The girls of the room to which the sick person belongs show the most tender feeling: the woman who died on Saturday last was supported by two of her fellow-workers when she expired.

8. Our Savings Bank is not just now in a flourishing state, which, I must confess, is not the fault of the people, but of the Chaplain. It occupies so much of my time that I find it difficult to attend to it. I am, however, to have a helper, and hope to begin again in good earnest next year. I may mention that at the time of the panic, when trade received such a serious check, there were females among us, some of whom had not a creature they could look to for help, who had sufficient money in the bank to carry them right through the winter. I see, from the book of the woman who died on Saturday last, that she had 9*l.* 1s. 8d. saved. She has no friends excepting a kind, noble-hearted widow, with whom she lived: the money is to be given to her." In a subsequent communication the Chaplain says:—"We are just about to start, under improved regulations, our bank, which we intend to call a *Penny Bank*. It will be for the use of our own people only, and they will be allowed to deposit as little as a penny and as much as a pound. Two persons—probably myself and an overlooker—will go over the warehouse shortly after the workpeople shall have been paid, to receive their deposits or to make payments.*

9. We have a sick club that has been in operation about a year, and there are at present on the books 204 members. This is the only one of our schemes which is not self-supporting. Indeed, this society might have been so, but that Mr. Adams does not like the common club system, where the medical attendant is paid a fixed amount yearly, and that frequently a very small one. He resolved, therefore, that the people should pay a penny a-week,—I mean those who might wish to do so,—and that the medical gentleman should keep a separate account for each patient, and send in his bill for attendance and medicine to the counting-house as soon as the case was done with. During the first ten months of the society's existence the sum received from the hands was 37*l.* 4s. 11d., whilst the amount paid for medical attendance by the firm was 63*l.* 3s. 6d.

10. As we all enjoy many privileges owing to our connection with the warehouse, we think it only right that we should try and do a little good to others; accordingly we have, for the last two years or more, been supporting a missionary school on the Red River. This money comes chiefly from the working males and females. But it may be asked—Is there no undue influence exerted to get this money from the people? None whatever. To prevent this, the people collect it among themselves, and a person is deputed to hand over their little sums every fortnight. It is not known to me who give and who do not. They take great interest in this little matter. In the past year the aggregate sum handed to me for the above object was 25*l.* 3s. 5½d.

11. We circulate periodicals among those who like to have them. Last year we received 18*l.* in payments for these. The works are—'Leisure Hour,' 'The Sunday at Home,' 'British Workman,' 'Teacher's Friend,' 'Family Economist,' &c. The people also purchase Bibles and other books from me, paying for them by instalments.* On Wednesday evening I am at my own home after warehouse hours, and the people know I am to be found there if wanted, and they come to see me, perhaps to ask for religious counsel, or for advice on domestic subjects. On Wednesday night last I had a larger number than usual—eleven came.

My time is occupied in a variety of other ways than those I have named; but these are the chief matters which take up my attention from week to week. Since I last wrote you, Mr. Adams has engaged the services of a person to act in the capacity of a general superintendent of the warehouse. He is a man of good education and gentlemanly mien, and will not fail, I think, to secure the respect of the people. His duties will be to traverse the warehouse from top to bottom, and be as nearly ubiquitous as possible,—to see that every one employed is in his or her right place,—to correct irregularities if only trivial, and to report them if serious. I cannot but think that this arrangement will be attended with very happy results.

You are of course aware that, where large numbers of young people of both sexes are brought into daily contact, there must be at least a great deal to excite one's fears. Wherever such arrangements prevail there is immorality, and our warehouse is no exception to the rule; but there certainly is far less among us than there used to be. The daily service has been very beneficial in this respect,—it has been the means of many of our young people becoming entirely changed characters, and I do trust that there will yet be many more."†

* We can hardly overrate the importance of encouraging the labouring classes to lay up against the evil day, especially when we consider how great is the number of destitute widows and orphans. From the last report of the Poor-law Board we learn that the number of widows, July 1st, 1858, in receipt of out-door relief, in 629 Unions in England, amounts to 50,468; yet these figures do not reveal the number of orphan children belonging to the widows, no more than they do the number of widows and orphans who are all but on the Union, and the number of wives struggling in poverty whose husbands are disabled through infirmity or long sickness.

* Last year I sold of Offor's beautiful edition of the "Pilgrim's Progress" sixty-eight copies at 2s. 6d. each. I also sold 152 copies of Miss Marsh's "Light for the Line" at 6d. each, and eighteen Bibles, chiefly family Bibles, quarto.

† This paper, by Mr. John Roberton, was read before the Manchester Statistical Society. To be continued.

THE GENIUS OF VANBRUGH: BLENHEIM.‡

THE grand master-fault of Vanbrugh, according to his detractors (who, be it remembered, are all of one school,—scholars of one belief, and men of corresponding train of thought) is, the neglect of rule which characterises so strikingly his productions; the very slight and partial reverence which, *seemingly*, he paid to modes of composition taught and practised by his predecessors; and that strong self-assurance and independent feeling which led him to place such confidence in himself and in his own genius.

His detractors are the *ultra*-advocates of adherence to precedent,—men who denounce departure therefrom as the greatest error, and any originality of invention in architectural composition with feelings somewhat analogous to those of the theologian who sees the feeble thoughts of the human mind attached to the sacred Scriptures as improvements. The one, in their notion, is as great a heretic in architectural composition as the other is in religious belief; and, as a consequence, in the opinion of these men, our architect's views were more heterodox, and his conduct more blameworthy and injurious to the profession than that of *almost* any man who has practised considerably as a member of its ranks.

Surely it must be acknowledged that the slavish trusting to precedent is most unhealthy in its nature, and must be very injurious in its consequences, if it attain an *ascendant* authority over the minds of architectural students. I know of no influence more powerful to turn the mind in *favour* of Vanbrugh, and to induce the student to seek a more reasonable and just standard to apply his works to, than such an indiscriminate censure as Vanbrugh has suffered from the hands of these men; because his works were not able to stand the comparison with precedent. Allan Cunningham says, most justly,—"Vanbrugh was an inventor: he has been criticised by a race of classic copyists who think it a merit of the highest kind to build according to the express dimensions and form of some famous temple of old. They cannot perceive that he has dealt in

‡ The following observations form part of "A Critical Essay on the Architectural Genius of Sir John Vanbrugh," signed *Hope*, and submitted to the Royal Institute of Architects, last session in competition for their medal.

the *original elements* of art; and, disdaining to copy where he could invent, has created an original style" (or, rather, originality of treatment) "of his own." "The scholars of his day were against him, but he obtained the wider applause of those who were not learned enough to try merit by other standards than their own feelings."

Without yet offering one opinion of the train of thought from which Vanbrugh's works sprang as the fruit from the tree, I think that this authority and absoluteness of styles should be combated by arguments which have occurred to my mind, and, in spite of efforts to shake them off, demand to be heard.

These men advocate the absoluteness of style, and the authority of precedent; by which they mean, that since Gothic architecture is chiefly associated in our minds with the Christian Church, and since its most successful and beautiful examples are ecclesiastical edifices, *therefore* Gothic architecture furnishes to us unquestioned precedents for all future edifices of that class. Upon its beauties we may be allowed to improve, if we can, but from its distinct and settled characteristic principles and features no man must depart.

Some even say that not only all other styles of architecture which have had their birth and development are to be ignored *as* styles; but even any of their features or elements, however beautiful, are not to be valued and esteemed by us, because they may not harmoniously blend with their favourite style, which is to displace every other style, at all times, and for whatever purpose the structure may be intended, to which they apply it.

There are other men who have broader views, who see beauties in more styles than one, and who are ever willing that these styles may be severally adopted by our architects, and, in their fuller development, made increasingly beautiful; but, whilst agreeing with the other class that Gothic is *the* style *par eminence* for ecclesiastical edifices, since the Christian Church conceived it, and developed it as its own,—they deny its applicability, or even the appropriateness of its architectural expression, for other and secular purposes. *Their* theory is, that municipal and secular public buildings should be faithful and scrupulously correct imitations of some classic (Grecian or Roman) edifice, with such deviation from precedent as the peculiarities of modern wants absolutely necessitate; whilst the requirements of a palace, a villa, and all domestic structures, call for as faithful an adoption of the Italian style, preserving as closely as circumstances will permit the characteristics which belonged to it as a style in its palmy days, and in its early freshness and vigour.

Yet, it must be acknowledged that precedent *alone* is a most inadequate and unsatisfactory authority for our present architectural practice. The *fact* that most artistic and exquisitely beautiful and harmonious creations were conceived and produced by the Middle Age architects—edifices which were not only in harmony with the ritual ceremonies and the religious feelings of the age, but which were actually the architectural expression of those feelings—is certainly not sufficient authority to bind *us* to a servile copyism of them in our present ecclesiastical edifices, whose ceremonies are so unlike, and whose feelings are so changed.

Nor do these men tell us *why* our intellectual and *creative* faculties are to be cramped and restrained more considerably than those of any preceding age by such adherence to precedent.

I think that in a future day our art shall be unique; that every development of it, for every purpose, shall spring from common principles; and, amidst large diversity and variety of architectural expression, our architecture, as a noble art, shall be perfectly harmonious at all times with itself. I conceive that the several styles shall not proceed as at present—everlastingly upon the same beaten track, even to the perfection of each; but the judicious efforts of a band of geniuses shall bring about the convergence of these styles into a phase of architecture as unique as any preceding style, and yet which shall be calculated more fully to express the feelings and the thoughts of our advanced civilization.

Though Vanbrugh was the author of several architectural works (some of which do not now exist), among them being a façade to Grimsthorpe, in Lincolnshire, and King's Weston, near Bristol, erected for the Hon. Edward Southwell, yet his fame must ever rest on his two masterpieces of composition—I mean the palatial edifices of Blenheim and Castle Howard, which infinitely more fittingly attest the native grandeur and majesty of our nobility than the baronial castles and fortified strongholds of their ancestors.

There are strong and marked points of divergence in these compositions, but it requires little closeness of attention to trace the defined and characteristic workings of the same master-mind in them both.

What I consider to be the first and most indispensable law of architectural composition, that the work should have its due meed of praise, or even be styled a work of art at all, demands that it should be a *perfect* conception, elaborated and worked out, free from all fragmentariness or sketchiness, and should be complete in itself, as needless of addition, or as liable to suffer from excision as the human frame. Blenheim and Castle Howard illustrate this principle most strikingly.

Secondly. In this advanced and progressive stage of architectural practice, each work of art should be distinguished by *variety* in plan, and in perspectives. I must qualify my assertion, and remark that this law is almost inflexible where our structure is surrounded by landscape, of which it is to form a component part.

Sir Joshua Reynolds, in one of his discourses, *suggests* this thought, and adduces Vanbrugh as an illustration of the happy effect of its free recognition. He says, "Variety and intricacy is a beauty and excellence in every other of the arts which address the imagination, and why not in architecture?"

I have been much impressed with the power to delight, which the various perspectives of Blenheim can impart. As you walk round it, at a suitable distance to take the whole structure within the range of your vision, fresh beauties and fresh combinations of forms strike upon your eye. Sir Uvedale Price says, "No mansion has, from such a number of different points, so grand an appearance as Blenheim."

A higher expression of beauty than this, which I have denominated a *passive* one, is inadmissible in the palatial residences of our cities, where the line of plan is determined by the formal regularity of its streets and its squares,—the cities of Rome and Florence, presenting to us some of the most illustrious examples of this style of treatment. But, surely, was not Vanbrugh justified in striving to emulate in his beautiful art-creations, by the free use of this element, the piquant life of the varied landscape scenery in which his work was embosomed, and of which it formed one of the most essential parts?

Speaking of Vanburgh's proportions—though they often are as singular as his genius—yet the pavilions at the four angles of Blenheim are in excellent proportion; and have, by the way, been introduced wisely and with discrimination, for they are surmounted by belvideres for the better appreciation of the beauties of the landscape.

The south façade of Blenheim, in my estimation, is treated with the most artistic feeling. The scenery is full of grace, and the *spirit* of beauty: some would say it was tame—there is nothing striking, obtruding, nor severe. And so Vanbrugh has designed in its spirit: he has shunned those bold and violent projections which he has so freely courted at other times; yet this façade is as free from tameness or insipidity as possible. This elevation is replete with a quiet, subdued vigour and energy. Due emphasis and increased expression are given to the colonnade or portico, as a central feature, and to the pavilions forming the angles.

In summing up these observations, and arriving at a just estimate, I beg leave to say that I do not believe in any remarkable *universality* in Vanbrugh's genius. I do not think he is destined, after the most perfect justice has been done him, to rise to the distinguished platform upon which our world's *greatest* men will stand.

In my opinion, Blenheim possesses many qualifications to be called a work of high art; and, as an architectural edifice, not the least of its peculiarities, and its greatest merit, is, that the whole of its wondrous beauty and grandeur are the effects of what should always be the predominant quality of our art—I mean, *form*. Simple lines and curves, varied in their contour, and diversified in their arrangement, are—to the exclusion of ornament and colour—the source of these results.

I know that some tell us that ornament or sculpture is the chief part of architecture; and, if they be consistent, they must brand this edifice as a huge pile of construction only, which the sentiments and pleasurable emotions of every student of these buildings flatly deny the truth of.

But, after all, the qualities which have been the chief attraction and source of wonder to all are those which are expressive purely of his individuality—his idiosyncracy. A certain degree of universality I have already given Vanbrugh the credit of; but I must reiterate that there never has practised a man in our art who left the marks and impress of his idiosyncracy upon everything which he touched so much as Vanbrugh.

Other men have designed singularities; but they have been whims, freaks; but we are not justified in stating that, *as a rule*, Vanbrugh's peculiarities were whims, but they were rather the creations simply of *his own* mind, distinct from anything which other men had produced, and harmonious with themselves. Seeing that Vanbrugh discarded all formulas or rules to guide him in his designs, I confess that I can discover no explanation whatever for the peculiarities of his proportions, the heavy forms (when not required for certain architectural expression) so very much complained of by his detractors, the singular and original *disposition*, *use*, and *arrangement* of those architectural elements which preceding styles furnished him with, the quaint and peculiar contours of his features, whose outline was not determined by the best principles of construction, other than that they were emphatically his own.

The student of Vanbrugh will find numerous instances of the outpouring of the soul into his works. His comedy has found vent in a myriad forms, in the decoration of the keystones of Castle Howard. The exuberance of his imagination, and the fertility of his invention, are alike displayed in the prodigal use of ornament, in both the interior and exterior of that palace.

But perhaps the student will never understand the existence of an individuality in the treatment of Vanbrugh's productions so forcibly as if he visited Blenheim, and viewed it by the light of the moon, when he will find an undue prominence given to the forms upon the summit of the structure, exhibiting their contour and outline to great advantage against the illumined sky, whilst the more impressive qualities, those more purely architectural and grand, dwindle, on such an occasion, into comparative unimportance.

So I am convinced that when Vanbrugh is studied through the medium of prints, views, or displayed elevations, similar injustice is done him, in consequence of a like preponderance being given to these peculiarities.

I would here quote the remarkable words of Mr. Gwilt upon this very subject:—"Vanbrugh's buildings are the result of a combination of forms and anticipation of effects, *originating solely from himself*; effects which none before had seen or contemplated."

HINTS ON THE BUILDING OF SCHOOLS.

SOME time since Mr. Harry Chester delivered a lecture on the subject of Building a School. It was afterwards published,* and it may not be useless to reproduce some portion of it in our pages.

I do not say never accept, but I advise you never to seek, the gratuitous services of a solicitor or architect. The true professional responsibility is scarcely consistent with gratuitous performance. You must not look a gift horse in the mouth; and you can scarcely haul over the coals a gratuitous attorney. Engage professional services on the usual professional terms; and when these services have been rendered and remunerated, then and not sooner, is the proper season for professional donations, if any, to be made.

When your memorial, and the plan of your proposed site, have been approved by 'My Lords,' they will send to you two distinct sets of instructions, which you may find more or less easy to understand;—first, with reference to the plans, specifications, estimates, and available funds for the building; and second, with reference to the title to the site, and to its conveyance in trust.

The documents which relate to the plans, specifications, and estimates should form a part of the general instructions which you should now give to the best architect that you know of, or to a few of the best architects in competition, to prepare the plans and specifications.

When the Committee of Council on Education was first created, in 1839, so little attention had been given to the planning of schools, that they were very commonly erected by the village bricklayer and carpenter, by rule of thumb, without any plans at all. The National Society, not so wise then as now, had unfortunately proclaimed that 'any shape' would do for a school, and that there was no better model than a 'common barn.' The organization of schools had been little studied.

* Chapman & Hall, Piccadilly.

The buildings were low, thin, dingy, ill-drained, often without means of warming, often without proper conveniences; with no furniture but a teacher's desk, a few rickety forms, a rod, a cane, and a fool's-cap: the floors were almost invariably of brick—the worst kind of floor, as it is tenacious of moisture, cold to the feet, easily abraded into red dust, and soon worn into holes. There were rarely any porches or lobbies for the caps and cloaks of the children. If there were a house for the teacher, it was seldom such a house as a teacher of the present day would like to inhabit.

Under these circumstances, when the Committee of Council on Education requested the applicants for grants to exhibit plans and specifications of their proposed buildings, the request was often regarded as an insult. 'Plans and specifications! why put me to the expense of plans? do My Lords suppose that I cannot build a school without plans?' Others were milder or more honest, and sent plans about the size of the palm of my hand, with a few indistinct scratches upon it. Now, however, all this is improved. The National Society has long been wiser than it was in 1839. It has set a splendid example to the other educational societies: they all vie with each other in architectural exploits; and the land is adorned with schools. The most celebrated architects undertake to design these buildings; and give their minds to the designs. No one now thinks that a school can be built anyhow, without any reference to the uses to which the building is to be applied.

Of course, a school may be held in almost any building; and a clever teacher may teach cleverly almost anywhere; but the shape of a school-room is nevertheless important as regards (1st) the cost of the building; (2nd) the convenience of organization and supervision; and (3rd) the strength of the teacher. Persons used to go, and some persons still go, to an architect, and say, 'Let me have a plan of a school for (say) 100 children, allowing six square feet to each child.' Now, what could an architect do, thus instructed? In the first place, no school can be so organized that six square feet per child will afford a sufficient area; and, in the second place, you can no more determine how many square feet per scholar will suffice in a particular school, without reference to the peculiar organization of that school, than you can determine how many guests can sit down to dinner in a dining-room without knowing the shape of the room, and whether the table is round or oblong. The capacity of a school-room depends on the organization of the school, on the length and breadth of the room, and on the positions of the doors and fire-places.

Before you instruct an architect to prepare plans, determine how many scholars you will provide for, and on what system you will organize the school. How many boys, how many girls, and how many infants? Shall the boys and girls be instructed in one room as a 'mixed' school, or in two separate rooms? If you wish to have a perfectly convenient building, you must determine these questions before you instruct your architect. In your mind's eye you must see the several departments and classes of the school at work; and then, the area necessary for each portion of the work of each class being calculated, you may surround the scholars (as it were) with the proper walls, and you may give such instructions to your architect as will enable him to prepare a convenient and economical plan.

It is possible to organize a school in a great variety of ways; but, given the case that we have to deal with in educating the poor, *i.e.* given one principal teacher, assisted only by pupil-teachers, to instruct the greatest possible number of children, I am satisfied that the organization, recommended by the Committee of Council on Education, and commonly used in the best national and many other schools, is on the whole by far the best; and therefore to this system of organization alone I shall at present refer. It is not my business to give a series of plans for schools. That is the proper work of architects.

* * * * *

In extreme cases it may be necessary to have groups of benches and desks on two opposite sides of a room: it should then be not less than 30 feet wide; but this arrangement has many inconveniences, and I recommend you to avoid it if possible. The fireplaces are at the two ends of the room, in the corners, where the fires, though out of the way of the children and of the teachers, can be seen from all parts of the room. The flues may be 'gathered over' and carried up in the gables. The walls all round are free for maps, diagrams, and pictures.

Windows should be high up. Get your light as high as possible, plenty of it, and from all quarters if possible, by stilted windows in the long walls, by great windows in the gables, by dormer windows, and (best of all, in my opinion) by vertical sky-lights. No wretched little diamond quarries, but big panes of white glass. Let all windows be made to open. Have blinds to the east, south, and west. Never let the children or the teachers sit or stand in front of an unblinded window on a bright day. If you do this, you may do more than you intend towards blinding the children and teachers. When I go into a school-room and see the poor things blinking in the face of a streaming sun, I cannot help thinking that the managers should be indicted for cruelty. Never introduce a window in such a position that a child standing in its place at its desk or on the gallery will be projected in front of the light. As far as may be, let your light from different quarters be equalized, so that strong shadows may not be cast. If the faces of the children are in a full light, an equal light should be cast on the teacher's face and board, otherwise they will be in shadow. Do not place a gallery in a school-room at right angles, or opposite, to the benches and desks: if the gallery be in the same plane as the benches and desks, the teacher, instructing a class on the gallery, retains a command of the rest of the room. The seats of a gallery (not intended for infants) should be fitted with backs, which are not needed in the desked groups, as the children receive support from the desks. The height of a seat should be such that the knees of a child seated thereon shall be bent at a right angle: the desks for the girls should be made with flaps to let down for needlework, leaving only a ledge horizontal to hold cottons and scissors, and allowing space for the girls to place their work on their knees.

Be very particular in your specification for the floor of the school-room. Oak being too expensive, the planks should be of the best deal, perfectly seasoned, and well laid down. If they are cut into short lengths, they will be the less noisy.

Make your school-rooms as comfortable and as pleasing to the eye as possible. What can be more depressing than the appearance of many school-rooms, which exhibit either extreme, of bare walls or of superabundant hangings of untidy maps, ugly pictures, threatening texts? The latter extreme is the worse of the two. I have seen school-rooms whose walls have been so huddled all over with such things as to make one imagine oneself in an ill-arranged religious toy-shop. I advise you to batten your walls, which will add a little to the cost, and a great deal to the comfort. If you will paper your battened walls with a few good bright maps, a few good diagrams, a few good prints, and a very few well-chosen texts; and if, round each of them, arranged with good taste, you will paste a little border of coloured paper to set it off as by a frame, the cost will be trifling, and the educating effect will be very great; and if you will have the whole surface well sized and well varnished, the walls may be occasionally washed, and will not require to be repapered for many years. The ground colour of the walls should be light and warm: avoid yellow, which I believe to have an injurious effect on health. Instead of smothering the walls with prints, have as good and as large a collection of prints as possible in strong books, with leaves of brown holland: you will find them repay you for the trouble and expense. Let such texts as you select be rather soothing and elevating, than grim and depressing.

The woodwork, especially in the higher portions of a school-room, is very commonly too much darkened.

Benches and desks of birch, varnished, will cost little more than deal, and be better appreciated and taken care of; but they may warp if not made of wood particularly well seasoned. Do not screw the fittings to the floor, but either have them heavy and firm enough in their own weight to be not easily capable of accidental displacement, and yet such as may be lifted from one part of the room to another; or screw them to sleepers, and lay the sleepers loose on the floor. The benches at least should be so constructed as to stand each by itself when wanted, apart from the sleepers. The hindmost bench and desk should be somewhat taller than those of the middle row, and the latter should be somewhat taller than the front row. In opposition to the ordinary opinion and practice, I advise you to provide a larder and pantry—small ones will suffice—in the teacher's house, and to let there be plenty of cupboards and presses in the school and in the house, and coal-cellars capable of containing a year's supply. It is also as well not to forget to lay on water, or to provide a well and pumps.

Have the ground so made up to the entrances of the schools that there may be no need of high flights of steps. There should not be more than a single step, if any, at the entrance of an infant school. There should be a provision for washing hands, but not on a large scale: the children should come to school with clean hands. Never provide a separate entrance for visitors, but keep the children's lobbies in a state fit for the passing of visitors; and if the children's doors are large enough to admit crinoline of reasonable size, unreasonable crinoline need not be admitted.

Allow no inferior nor unduly perishable materials to be used in the building: let everything be of the most durable character. In regard to the architectural style, I say only let it be pure and simple. (*Pace* Lord Palmerston and Mr. Tite) I have seen many excellent Gothic designs, some good Elizabethan designs, and some few very bad Italian designs for schools. Whatever you do, do not allow of any false architecture: let the beauty of the building depend on its good proportions, its good materials and workmanship, its correct details, and on its exterior's truthfully representing the facts of the interior. For example, do not turn the master's kitchen into a Crystal Palace on a small scale, under the notion that, where you want a window of moderate dimensions, you may have a great big one to balance another big one, very properly placed in one of the end walls of a school-room. Do not allow breaks and projections for mere effect, where uses point to unbroken lines: forbid all construction of ornament as ornament, and let the real structure of the building be ornamental. Let the ground plan be first settled as convenience may point out, and let the elevations absolutely follow the carefully-arranged ground plan. Never let the ground plan be tampered with under the idea of improving the elevation: for effect and utility combined, let the chimneys be lofty and massive. About open roofs, where all the timbers are shown, I confess myself somewhat heretical. *Non equidem invideo, miror magis:* hot in summer, cold in winter, they are more handsome than comfortable. For comfort, give me a ceiled room, having a good air-chamber between the ceiling and the roof: if you object to a ceiling, even at the collar-beam, you must at least ceil to the rafters, and insert a layer of felt; and you should board to the under side of the rafters.

Never let any one persuade you that the site does not require draining.—

Let sites be drain'd that ne'er were drain'd before,
And those that have been drain'd, be now drain'd more."

ROMAN MOSAICS.

AT the last meeting of the Northern Architectural Association, Mr. F. R. Wilson, as elsewhere mentioned, read the following observations on the manufacture of mosaics:—

At a former meeting I took occasion to suggest the use of mosaics as a decoration for buildings in this country. My suggestion referred then most especially to the Royal Exchange, London, where the distemper decorations had perished, or been obliterated by smoke, only a very few years after they were perfected. I have seen since, in the *Builder*, that there is a proposal to apply mosaics to the embellishment of the interior of St. Paul's Cathedral, London, after the manner of those in St. Peter's in Rome; and deeming that such a proposition is likely to call forth a more general desire to know more of the particular decoration in question, I venture to introduce to the present meeting the specimens I brought home from the Eternal City.

The small pieces of enamel, about the size of a pin's head, are those employed in the manufacture of the smallest objects,—ornaments, trinkets, &c. The larger sizes are used for larger surfaces, such as pictures, or buildings; and when required for situations very removed from the eye, as in the dome of St. Peter's, the cubes are nearly an inch square. You will note that the edges of the blocks are not geometrically perfect—a circumstance which takes away all appearance of stiffness, and admits of more accommodation, in some cases, to the exigencies of outline.

The studio in which the government manufactory is carried on—a room nearly a quarter of a mile long—is in the Vatican itself, and is a sight most artist-visitors take care to see. Some idea may be formed of the nicety and skill required in the manufacture of these stone pictures, when we consider that there are upwards of ten thousand tints in the enamels, and that an artist will sometimes spend from twelve to twenty years in the

delicate though durable construction of a large work. Great knowledge of art, and a full appreciation of the difference of schools, are requisite to do justice to subjects thus invested with immortality. The prices of the same design vary, according to the character of the work, from one to five-fold.

The method employed in forming a picture is not intricate. A ground-work of a certain clay is first formed, into which the slender shafts of enamel (all ready to the hand) are inserted in the order and colour required. When this stage of the operation is completed, the surface is reduced to a level by means of grinding with a lathe. When unequal heights are thus removed, there remains but the application of a fine polish to finish the process. Pictures are thus produced which rival those of the easel in the subtlety of their colouring, and in the grace of their flowing lines; and outshine them all in the imperishable nature of their tints, and in the almost everlasting qualities of the materials used in their construction. Mosaics more than two thousand years old attest these facts.

It remains only to inquire whether the conditions of our very humid climate be likely to affect mosaic work injuriously. The tesselated pavements of both ancients and moderns appear to have suffered no ill from them. At all events, it is very clear that decorations in distemper are not for us; and that it is highly desirable to find an efficient substitute for their light and colour in a superior vehicle as regards durability: for, with the increasing appreciation of the beautiful so strongly manifested around us, we may be assured that the public will not be content much longer with white-wash for the decoration of the national buildings.

NORTHERN ARCHITECTURAL ASSOCIATION.

THE committee of the Northern Architectural Association, in pursuance of one of the objects of the Society, forwarded the following protest to the advertisement lately issued by the committee of the Hartlepool Mechanics' Institute.

ADVERTISEMENT.

"The committee of the Hartlepool Mechanics' Institute are desirous of receiving plans and drawings for a proposed new institute, to be erected at the head of Middlegate-street. The site is 100 feet by 50 feet, and the building is to include library, news-room, class-rooms, large lecture-hall, and keeper's rooms. A premium of 10*l.* will be given for the plans approved of and accepted. Plans, accompanied with estimates of the cost, to be sent to the secretary, Mr. J. Hindmarsh, on or before the 2nd day of July, next."

The following condition was also appended:—

"That the committee do not bind themselves to employ, in any way, the drawer of the successful plan, or to pay any other remuneration than the 10*l.* for the plan accepted."

RESOLUTION.

"The Committee of the Northern Architectural Association, having had their attention drawn to the advertisement issued by the Committee of the Hartlepool Mechanics' Institute, offering a premium of 10*l.* for the best plan for a proposed new building, beg respectfully to call the attention of the committee to the utter inadequacy of the payment as a remuneration to the successful competitor, especially as the committee do not bind themselves to pay any other remuneration, or to employ in any way the drawer of the accepted plan; and the committee would also respectfully suggest that the terms of the competition be revised, and beg to offer their services to assist in preparing such terms as may be equally advantageous and honourable to the committee and to the competitors."

The committee of the Mechanics' Institute have not responded to the offer and suggestion of the committee of the Association, but have awarded the premium to their vice-president, Mr. J. W. Gaffray, manager at Messrs. Richardson's engine factory. There were six competitors.

The ordinary quarterly meeting of this Association was held on Saturday, the 15th inst., in the Old Castle, Newcastle-on-Tyne, Mr. Dobson, president, in the chair. After transacting the preliminary business, and electing Mr. Green a vice-president, in place of the late Mr. Wardle, Mr. Prichett, of Darlington, re-read a paper entitled "The Evils of our present Practice, and the best Way of remedying them," and concluded by proposing the following resolutions, which, after some discussion, were carried unanimously:—1st. That the committee, with power to add to their number, be requested to correspond with other associations, to ascertain the possibility of establishing an Architectural Alliance, and report to next meeting. 2nd. That the committee, with power to add to their number, be requested to prepare a code of professional charges, for the use of this Association, to be laid before the next meeting. 3rd. That the committee, with power to add to their number, be requested to prepare a circular to be sent to the promoters of all competitions advertised, the conditions of which are not satisfactory, and present it to the next meeting. Mr. F. R. Wilson afterwards read a paper on Roman Mosaics, which we print elsewhere. After remarks from the president and other members, it was agreed that the annual excursion be to Hexham and neighbourhood, on the 1st of August next.

The Secretary, Mr. Oliver, called the attention of the members to the decision of the Royal Institute of British Architects to adjourn the consideration of the diploma question till November next, in order to ascertain the opinion of Provincial Architectural Societies, and urged the consideration of it in connection with the present resolutions.

ABINGDON RECREATION GROUND COMPETITION.

IN reply to the offer of a premium for the best designs for laying out the Recreation Ground at Abingdon, Berks, several were submitted. From these, we understand, the Governors of Christ's Hospital have selected the design of Mr. J. W. Chapman, landscape gardener, of Dulwich.

GENEALOGICAL AND HISTORICAL SOCIETY.

THE annual general meeting of this society was held on Tuesday night last in the mansion of the president, the Earl of Ellesmere. Lord Ebury, one of the vice-presidents, took the chair, and the vice-chair was filled by Sir Thomas Maryon Wilson, Bart.

In opening the business of the evening Lord Ebury stated that the objects of the Genealogical and Historical Society deserved to be more widely known than they were. They are the collection, recording, and preserving facts connected with the descent and history of families: these facts are in danger of passing into utter oblivion, though they often throw unexpected light on many events in the history of the nation, and therefore possess a general as well as particular interest. The report of the past year was then read and adopted. It stated that the society is receiving a steady, increasing support; but the funds at its command do not yet allow it to make such an extensive examination of the public records and the private sources of information at its disposal as the Council would desire. Nevertheless the materials it has gathered already fill several folio volumes. In the last year the society has examined the registers of wills in thirteen diocesan courts, commencing with the will of the earliest date in each, and has had extracts made from them relating to names of military, political, or literary celebrity.

After other formal business, the Rev. Thomas Hugo read a paper on the Domesday Survey, showing the importance of the information which Domesday Book affords with reference to the ancient tenure of land, and the names of those who held land at the time of the survey.

Mr. Hamilton followed with a paper "On the Anglo-Saxon Chronicles, and the History and Heraldry of the Saxon Kings;" and Professor Christmas delivered a discourse on "Half a Crown, Historically and Archæologically considered."

THE PRESENT STATE OF CHURCH-BUILDING.

So much has been said and written on the best form and arrangement of large churches, that some apology might seem to be needed in offering the following remarks on so trite a subject: I can only plead as an excuse a very strong conviction that in the struggle to escape from so-called Classicism, and to return to the healthy and vigorous guidance of our Mediæval masters, we have, in church-building, lost sight of some of the first principles which governed them, as they ought to govern us now. It was only natural that in the early days of the revival the merits of a new church should be judged according as it approached more or less nearly to an exact copy of some Mediæval favourite; but now that architects are supposed to have risen above copyism, and to be able to originate churches rivalling our ancient models in beauty, it is time to take a common-sense view of the question, and to ask ourselves whether our present system is really founded on true principles.

Let us start with these two axioms:—First, that a building should be in every respect adapted as completely as our resources will allow to the purposes for which it is erected; and, secondly, that in its architecture—*i.e.*, not only in the furniture and arrangements, but in the bare walls—the very skeleton, in fact, of the complete edifice, it should bear the lasting marks and evidence of its original purpose.

Now, we invariably see these principles carried out in our old churches. They presented the most convenient form for the existing services, and to this day we find the piscinæ marking the position of altars; we find the sedilia, the aumbry, the credence-table, the low side-windows, the priest's door, and the entrance to the rood-loft, even where rood and loft have long since been destroyed: all these we find as parts of the building, each speaking for itself, and bearing evidence while the church stands of some rite or custom in use when it was built. Go, on the other hand, into almost any one of the best of our modern churches, and examine it with reference to these principles. Beautiful and correct in detail as it is, you find, in the first place, a building unadapted in many respects to our present requirements—still, in fact, a mere dead copy of the Mediæval type, if not of any particular example. You find that it wants all the interest imparted by the above-named characteristic features; or, if it has any of them, they are either useless, and consequently meaningless, or else trivial and unnecessary, and apt to give offence to many minds. Turn to the body of the church, and you find a roof containing a forest of timber, high pitched, and open to the ridge, thus giving a form of ceiling destructive to all acoustic qualities, so that you will generally find the officiating minister nearly inaudible at the west end of the church.

Turning to the aisles, you find that the view of a considerable number of the congregation is obstructed by the columns of the nave arches. You find the font placed canonically near the western entrance, but its position unmarked save by a gap in the sittings. The altar, pulpit, and reading-desk were probably provided for by a sum named in the specification, and the very positions of the two latter not finally settled, perhaps, until near the completion of the building; so that they are necessarily mere pieces of furniture, which might be removed in an hour, and leave not a trace behind. The church, in fact, carries in itself no inherent evidence of what our ritual now is.

Again, we can adapt our existing Mediæval church more or less completely to our present wants; but we cannot, without violent destruction, get rid of the means and appliances of forms of worship now passed away. But in a modern church how different is it! What a want of interest in the building itself, apart from decoration! It is generally ill adapted for seeing and hearing, and, while thus sacrificing utility to what is considered church-like appearance, it might, without injury to the fabric, be stripped in a few hours of all evidence of any particular kind of ritual observance whatsoever. This cannot be right, and yet the principles with which we started will probably be readily admitted by all those who habitually infringe them in the case of churches.

What have we to do, then, in designing a large church? We have to contrive accommodation for a great congregation, in a building the most fitting and convenient we can devise for seeing and hearing the officiating minister; and for joining, decorously, and with undistracted attention, in common prayer and praise; and we have to take care that our building shall show distinctly, in its architectural features, that in it are to be celebrated the two sacraments and daily services, consisting of public prayer and praise, the reading of God's word, and preaching.

The question of plan is one that must, of course, be settled in a great measure by peculiarities of site; but, wherever a church is built, we must not forget that there are many other considerations to be kept in view along with the mere requirements of seeing and hearing. And if these points can be satisfactorily attended to (putting it on no higher grounds than association and traditional custom), who would not see with regret the abandonment of nave, aisles, and chancel, and the substitution of the auditorium, half lecture-room, half theatre, which some persons wish for. The truth is, that it is possible, beyond doubt, to retain the traditional divisions, and yet to produce buildings fitted in every way to our present wants, and an architect should not content himself with less than this. To attempt to point out any of the methods that might suggest themselves would occupy too much space; but what we have to avoid may be summed up in a few words, namely, wide aisles and heavy piers,

deep chancels, excessive height, and high-pitched roofs open to the ridge.

Next let us take care to make the positions of altar, font, reading-desk, pulpit, and organ as distinctly marked as possible in the architecture of the building; to make them, in fact, as much as possible part and parcel of it, and to let none of them remain to be added as an after-thought or piece of furniture.

A clergyman, who has thought much on this subject, and could speak with authority on it, once said to me,—"Give me a handsome communion-table, a good and well-placed font, an unmistakeable reading-desk, and a large pulpit, not too low, and I do not care what the rest of your church is like." This is, of course, pushed to an extreme, but in it is involved the principle which I hold to be so sound, and so generally neglected in our modern system of church building.

M. A., Cambridge.

RAILWAY MATTERS.

THE directors of the Midland Railway have decided upon covering with a glass roof the down platform of the Chesterfield station from the collector's gate (the usual place of exit for passengers) to the semaphore signal. The work of roofing has been commenced.

On the 1st inst. the Great Indian Peninsula Railway to Sholapore was inspected by the Government consulting engineer and other railway officials, and the line from Mohol to Sholapore has been opened to the public. This section of twenty miles makes the entire length of the railway now opened 315 miles. Sholapore is the place that was chosen for a temporary station till the through line from Bombay to Madras was completed.

On the subject of preventible risk in fast railway travelling, Colonel Yolland, in a report to the Board of Trade (just published) on the accident at Hatfield in April, states that a train at Hatfield, travelling down an incline of 1 in 200 at the rate of sixty miles an hour (a frequent rate of that train at that point), could not have been stopped by the breaks in less than three-quarters of a mile. This, as he remarks, is a very unsatisfactory condition attending fast railway travelling, and such quick trains ought to be furnished with an amount of break power which will enable them to be stopped in a third of that distance: this can be done by means of continuous breaks, which augment the retarding power three or four fold. Two years ago the Board of Trade sent to all railway companies a report of the successful working of such breaks on the East Lancashire Railway, where a train of 90 tons, supplied with 80 per cent. of break power, travelling at the rate of 53 miles an hour down an incline of 1 in 120, was stopped after running 235 yards.

DOINGS IN CORK.

THE all-absorbing topic in the capital of Munster is the approaching national cattle show, which is to be honoured by the vice-regal presence; and judging from the enterprising characteristic spirit of the Corkonians, and the preparations made so far, we may fairly anticipate a creditable display.

The exhibition will be held in the corn exchange building, a portion of which, many of our readers will remember, was adapted for the industrial exposition of 1852, after designs by Sir John (then Mr.) Benson. A number of sheds have been erected, with promenades between of 20 feet in width, and with ranges of stalls on either side. These will be decorated with striped calico in various colours, and flags of all nations interspersed throughout the yards. Externally there will be a gay dressing of the main building likewise. Two drinking-fountains will be placed in the implement yard, also two ornamental *jets d'eau*, with cattle-troughs at base, in the promenades; and a fountain jet supplied with five gallons of *eau de Cologne* before the table allotted for his Excellency in the dining-hall, which will accommodate 550 persons. The ceiling of this apartment will be decorated also with striped calicoes, and the columns with festoons of evergreens and banners. A new supper-room of permanent character, 90 feet by 30 feet, and 18 feet to the eaves, and to accommodate 250 persons, is being built. The statue of William Pitt will form a conspicuous feature in this apartment.

Numerous English, Scotch, and Irish manufacturers of eminence have secured space in the implement department, which will embrace many other classes of goods besides those of a purely agricultural character.

We have little else to chronicle in the way of building improvements here; indeed, save the new St. Patrick's-bridge and the R. C. Church of SS. Peter and Paul, both in progress of construction,—matters are somewhat at a stand-still, and the builder's mission seems to have dwindled into a state of nothingness. The new bridge, which, between the abutments, will be 183 feet, and consist of three elliptical stone arches surmounted by balustraded parapets, and having a breadth of 60 feet at roadway level,—will supply a desideratum and verify the proverb, that "out of evil cometh good." It is being built under the direction of Sir John Benson by Mr. Hargreave, contractor; Mr. Barnard, clerk of works; and will cost some 15,000*l*. We must remark, *en passant*, that the architects (Messrs. Pugin & Ashlin) of the new church above alluded to, can hardly congratulate themselves on the site of the structure, completely hemmed in as it is by the backs of houses on all sides.

THE WESTMINSTER PALACE HOTEL COMPANY.

MR. S. C. HALL, a member of the Board, has printed a letter to his brother shareholders "concerning the position, past and present, and the future prospects, of the Westminster Palace Hotel Company," which, whatever reply the other directors may have to portions of the charge, shows proceedings on their part unusual, illegal, and little calculated to inspire confidence, or lead to a satisfactory result. We must set Mr. Hall right, however, on one point:—

"The dismissal of Mr. Burchell was, he says, but the beginning of the end: the surveyor and the clerk of works were to be 'got rid of' also; and some time before the extraordinary meeting of the shareholders, a written question was put to the architect as to whether *he* could dispense with the services of the surveyor and the clerk of the works. It was akin to asking the wolf if dogs were needed for the protection of the flock! inasmuch as both these officers were guardians of the company, as *against* the architect and the builder. The clerk of works was expressly appointed by the board with that view: he was appointed in direct opposition to the wish of the architect, who claimed and contended for the right to such appointment. The answer of the architect was of course prearranged: it was simply the one word 'Yes.' The dismissal of these gentlemen did not, however, then take place, although they have since been so dismissed—an event in all respects deplorable, and to which I shall presently advert."

Without knowing whether the dismissal was judicious or right, it is necessary we should say that the duties of the measuring surveyor and the clerk of works are to carry out the views of the architect and to assist him,—not to protect the employer against him. The moment a committee, or board, or individual employers, cease to have confidence in their architect,—begin to believe that he has any object in view above the protection of their interests, the sooner they separate the better for them, the better for him, the better for all.

However, this is in no degree a reply to Mr. Hall's pamphlet. He has been from the first an indefatigable member of the Board, and led his friends to take shares representing a tenth of the whole capital required. He objects altogether to the arrangement which has been made with the India Board, and the *way* in which it has been made. He denounces the proceedings of the Board as showing "a thorough incapacity for business," and concludes by calling on the shareholders to attend the half-yearly meeting on August the 6th, and add to the Direction three or four members. I trust, he says,—

"That they will be themselves large shareholders, gentlemen of position and high character, and men of business; who will, by their ability, assiduity, and business habits, not only relieve you from danger, but soon and greatly improve your circumstances, and conduct this hotel for the advantage of the company, which the present board, so little aided by the business element, cannot do."

THE NEW BANK AND EXCHANGE BUILDING, VIENNA.

CONFINED space in the old building of the National Bank, in Vienna, and the want of a proper exchange for merchants in that city, induced the directors to undertake the new building, for which purpose they purchased the houses belonging to Count Traun, situated between the Herren Gasse, opposite their present place of business and the Freiung, and had them pulled down to afford a site for the new building.

Several architects of the city were invited to send in designs in accordance with a programme, drawn up by the bank directors;—among them, in August, 1855, Ferstel, who was then at Florence, but forthwith returned to Vienna, passing through Venice, and who endeavoured to embody in his design the artistic impressions he had received in these two Italian cities. He had the honour of having his design selected, and the superintendence of the building was entrusted to him in the beginning of the year 1856.

Unavoidable circumstances required modification in the plan, by which the area of the Exchange Hall was increased from 140 to 160 square fathoms, and the other rooms and passages became necessarily contracted. Necessity, however, demanded these alterations.

In addition to the great irregularity of the ground plot, the difficulty had to be encountered of partially using the old locality, and of not interfering with the neighbouring houses; so that while the building next the Freiung was roofed in in 1856, the last pulling down and getting in the foundations, towards Count Harrack's Palace, were warmly taken in hand, in the winter of 1857-58, and great difference was found in the depth to which the foundations had to be carried. The whole was roofed in in 1858, and the interior finished in 1859. The bazaar was opened October 3rd, and by the end of the same year the bank buildings could be brought into use. This summer the decoration of the Exchange Hall and of the coffee-room will be complete, and the whole building in use.

The arrangement of the whole building, and the purposes to which it is appropriated, are shown in the *Bauzeitung* (1 Heft, 1860), from which admirable periodical we have engraved the view in our present number, and have gathered these particulars.

The governor of the bank, Herr Ritter von Pipitz, desired that with strict economy, and avoiding useless luxury, the building should be carried out with solidity, and artistic as well as technical completeness, corresponding to the object of its erection, and to the dignity of so rich a national institution.

With the view of employing *genuine materials*, it was intended to use brick, with glazed coloured, and unglazed courses, &c., for the fronts, but the result of the trials not being satisfactory, free stone was chosen for all the fronts, as well as for the internal works. All carved ornament is wrought in stone. The stone was taken from different quarries, and varies in hardness according to the position in which it is used in the building. The balusters of the principal stairs are of marble. Polished stone is used for columns, plinth, and walls, in the Exchange Hall. In the coffee-rooms the columns are of polished stone, the walls in stucco to represent grey marble. *Natural* and real woods are used; oak for the windows and doors. The bank directors' room has a ceiling of carved oak, gilt and coloured; the wainscotting is of the same. The ante-hall of the Exchange, and the ante-hall of the bank directors' room, have ceilings of soft wood.

The floors are most substantially constructed of wood and iron. Hollow bricks, on rolled iron bearers, 3 to 4 feet apart, form the arched ceilings of the bank offices. These arches are plastered underneath to form a flat ceiling. The bearers are 9 inches deep, 5½ lines thick. The top and bottom flanges are 2 inches 9 lines wide, and 5 lines thick. Such a bearer, 22 feet long, weighs about 365 pounds, and costs about thirteen florins, say a guinea English the hundred pounds. The glass roofs have wrought-iron bars.

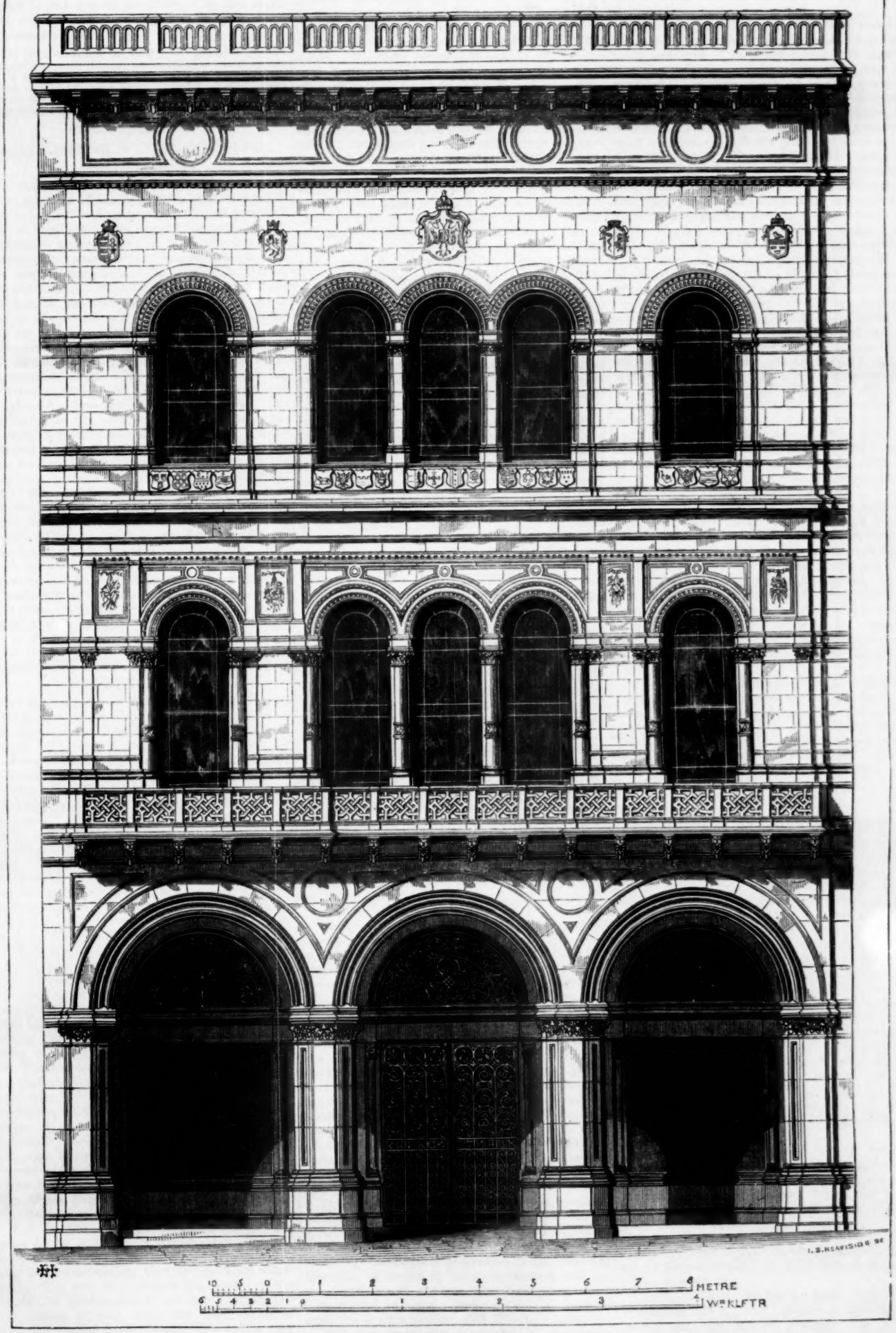
The walls of the passages and staircases are covered with solid, smooth cement work; those of the Exchange Hall in its lower portion, and of the coffee-room, with stucco-marble. The vaults of the vestibules, staircases, and halls, have ornamental fresco painting. The ceiling of the great Exchange Hall is of wood, and appears a piece of solid joinery, carried by strong beams. Bronze and brazier work are introduced in the doors of the hall, and in other places *red* bronze. The fittings and furniture correspond. There are leather hangings in the bank directors' room, after designs by the architect.

In the same room there is a chimneypiece of Porto Venere marble, with bas reliefs of Carrara marble, with oil paintings, and bas-reliefs in pear-tree wood.

In the bazaar staircase fresco painting is introduced, and in the Goods Exchange Hall there are bas-reliefs in stucco. Further works in stone and bronze have been agreed upon.

The cost of the whole building, together with internal fitting and embellishments, will amount to 1,400,000 florins, or, at twelve florins to the 1*l*. English, 116,666*l*. The plan is curious and suggestive.

Herr Ferstel is the architect of the Gothic Votiv Kirche, at Vienna, praised by Mr. Tite in his address to the Royal Institute of British Architects, of November 7, 1859.



THE NEW BANK AND EXCHANGE BUILDING, VIENNA.—HERR HENRY FERSTEL, ARCHITECT.

OSWESTRY CEMETERY COMPETITION.

THE competitors are about twenty in number. Nearly a dozen have written to members of the Burial Board, so that the adoption of mottoes is a joke. One correspondent says,—"The following is the closing paragraph of a signed circular forwarded to members of the Board. Do not architects, so writing, place themselves in the position of common shopkeepers?—

'We shall be happy to modify our plans, or prepare other designs more in accordance with the wishes of the Burial Board; or should our designs be generally approved, and other competitors' drawings exhibit points liked by the Board, we would not object working in conjunction with such competitor, if required.'"

SCARBOROUGH WESLEYAN CHAPEL COMPETITION.

IN answer to advertisement the committee received upwards of thirty designs, and, after consideration, those bearing the motto "Truth prevails" were selected, and were found to be from Mr. W. B. Stewart, architect, of that town, who has since received instructions from the committee to prepare the specifications. The design is Italian, with Corinthian portico, pediment, and four staircase towers, the two in front carried up considerably above the roof: the whole front of the building and staircase towers is to be faced with Whitby stone. (The original design, to cost 3,000*l.*, did not include columns and towers.) The whole congregation in the body of the chapel sit facing the minister direct. The body of the chapel is to be lighted by three sun-lights in the ceiling. The ventilation of the edifice is to be assisted by the windows: a piece of finely-perforated zinc is to be attached to the upper sash, so that, when the same is lowered, the zinc is drawn down with it from above the window head, filling up the aperture. The ventilation of the lecture-room it is proposed to assist by means of a revolving fan, placed in the roof, and worked by a descending weight, all the ventilating flues from the lecture-room being drawn together and connected with a case in which the fan works. The chapel is to accommodate 1,200 persons, allowing 1 foot 9 inches for each sitting, and 2 feet 9 inches for the width of the pews. The second premium was awarded to Messrs. J. & D. Petch.

PROPOSED LONDON, CHATHAM, AND DOVER RAILWAY.

THE fight which has been going on, first before a committee of the Commons, and now before a committee of the Lords, has cost thousands of pounds. We take from the evidence given by Mr. Joseph Cubitt, engineer of the railway, before the Lords, the following particulars, showing the direction of the line.

The line, he said, was considered by Mr. Turner and himself with a view of giving relief to the streets, and proving an independent access to the city of London, the terminus being in Farringdon-street. There was one portion of the line called the Beckenham Station, with which they proposed to make a junction, and so pass on under the Brighton railway to the Sydenham station by means of a girder bridge. There would be no difficulty in doing that, and it was constantly done by other companies. They then proceeded to Dulwich, near the Alleyne's Head, over the property of Dulwich College, and so on to Herne-hill. The carrying of this line through that property would greatly increase the value of it; and, as it would increase the value of the property, it would increase the benefits of the charity. The City section commenced at Herne-hill, passing over Cold Harbour-lane by a bridge, and from thence on a viaduct all the way to Farringdon-street. It would pass through Camberwell, Walworth, and Newington, with a station near the Elephant and Castle. From there the line passed over the New Kent-road, Newington-causeway, the Borough-road, and Friar-street, crossing the new street proposed to be made by the Metropolitan Board of Works from London-bridge to Stamford-street. From Green-street the line would go on by Holland-street, crossing the Thames by a bridge about 40 feet to the east of Blackfriars-bridge, the bridge to be 945 feet in length, including the abutments. He proposed a plan for making the bridge of nine arches, but that had not been determined. The line then skirted the houses on the east side of Bridge-street, crossing Ludgate-hill by a bridge 18 feet high, and from thence to the site of the old Fleet Prison. The bridge over Ludgate-hill was to be subject to the approval of the City authorities. The bridge over the Thames will be wide enough to take three lines of railway. The three lines will extend to Charlotte-street, Blackfriars-road. The total length of that line will be 4 miles, 3 furlongs, and 2 chains. The line from Farringdon-street would proceed to Skinner-street, and there form a junction, by a gradient of 1 in 40, with the Metropolitan Railway. That railway is an underground railway, and to get at it they were compelled to adopt that gradient. There would be no difficulty in working that railway with a junction of 1 in 40, as it would never be worked at a high speed. Whatever gradient it was, as the bridge over Ludgate-hill was fixed by the City authorities, they had no alternative to get a junction with the Metropolitan Railway but by the plan proposed. There would also be a short branch to the proposed dead-meat market under Smithfield-market, the length of this branch being one furlong and fifty chains. Another branch line commences at Herne-hill, and runs by Manor-road, at Brixton, where there would be a station for the benefit of the inhabitants of Brixton and Stockwell. It would then go on to Clapham, over the Wandsworth-road, and under the South-Western line at Stewart's-lane. It then went on to the West-end and Crystal Palace Railway at Pimlico. There will be a permissive communication at Stewart's-lane with the South-Western Railway. This junction is approved by the South-Western Railway Company. The worst gradient on the line would be 1 in 200. The length of the viaduct on one branch, No. 3, was 1,300 yards. He had great experience in making viaducts, and by means of those proposed it would afford almost an omnibus route from all parts to the City. There would be six stations on the line. The estimate for the whole of the works of the line was 1,650,000*l.*, 930,000*l.* for land, and 720,000*l.* for works and stations. There was a proposition for a branch to the Crystal Palace, but that was violently opposed by the Brighton Company, who have a monopoly of the traffic to it, and it was cut off by the committee of the House of Commons. His estimate of the cost of that branch was 12,810*l.* As to the Farringdon-street station, that was now clear, but they proposed to take additional property.

THREATENED DESTRUCTION OF THE HEREFORD TOWN HALL.

IN a few numbers back we lamented the rapid destruction of our national antiquities, and the want of taste and spirit which dictated such removals. We have now to record that it is in the contemplation of the Hereford city authorities to remove the remains of the interesting old wooden Townhall, standing in the centre of High-square, in that city.

This building is one of the largest of the kind erected in the kingdom. It measures 80 feet by 34 feet, and is supported on twenty-seven oak columns, having handsomely-enriched spandrils and pendants, which, together with the interior of the hall above, remain in a perfect state at the present time. It is to be hoped that the authorities will pause before they consign to destruction so curious an edifice.*

THE STRIKE IN COVENTRY.

GREAT distress, we regret to hear, prevails amongst the ribbon weavers of Coventry. More than 10,000 hands have turned out from their employment, and are wandering in the streets. This has been brought about by the change in our tariff with France, which in other ways will cause temporary trouble to various departments of trade. In the case of the Coventry ribbon weavers, it seems that the reduction of the duty on ribbons has led to the introduction of a quantity of French goods, of such quality, and at such prices, that those heretofore obtained for the English manufacture cannot be had, and the masters assert that they are obliged to abandon the prices which for some years past have been given to the men. The masters have also determined to pay weekly instead of by piece-work. The men have in consequence struck, and every loom is silent.

This dispute at the present time is most unfortunate, and if not settled will lead to disastrous results. Misfortunes which fall upon an individual induce feelings of commiseration, and these are naturally increased in proportion to the extent of the evil. A strike, it is to be feared, will not mend matters, at a time when both masters and men should be using every exertion to compete with the foreign maker; and if intelligence and right feeling on all sides are not used, the ribbon weaving trade will be lost to us. The new trade treaty is formed with a view towards the general benefit of both nations. In all such changes a certain amount of suffering must unfortunately be the result. In the matter of ribbons, the price of that commodity has been much reduced to the whole of the millions who form the population of this empire.

This saving it will be said is dearly earned at the sacrifice of so many persons—the impoverishment and ruin of so many homes. It does not seem to us, however, that this need be the case, provided that proper means are used to place the trade in a right position. Examining samples of ribbons for which there is the chief demand, it is seen that in the French patterns the colours are more harmonious and the patterns more tasteful than in our own. Nor is this to be wondered at when we consider the artistic education which has long been general in France. The change which has taken place should cause every exertion to be made to improve the defects of the artistic part of the English work, and the ribbon weavers must take advantage of the facilities which are to be had in England for manufacturing purposes, and of the powers which can be obtained through the advanced condition of science. If that be not done, the ribbon weavers will fall into the same condition as the silk weavers of Spitalfields. On the contrary, if proper endeavours and improvements are made, there seems to be no reason why we should not be able successfully to compete with the French, not only in our own country, but in the other markets of the world. In order, however, to ensure success, both masters and men must get rid of old-fashioned ideas, and work with that determination to succeed which has, in so many other instances, raised up struggling branches of industry into prosperous conditions, which have given employment to increased thousands, and added largely to the national wealth.

The spring reports of the factory inspectors show that wages for sixty hours a week are now higher than they were twenty years ago for sixty-nine hours in the week: new mills have sprung up, and hands have become so scarce that machinery has stood still from the want of them. It was not long since thought that the introduction of machinery would prove the ruin of the cotton-spinners: how different, however, have been the results—how vast has been the increase of cotton-spinning, and how improved is the condition of the work-people.

There is much intelligence in Coventry: the application of steam machinery has increased: but great work has yet to be done there; which, if properly carried forward, will do for ribbon weaving what has been so successfully carried out in other large branches of English manufacture. A strike, however, under the present circumstances, seems little better than madness.

* A view of the hall in its original state will be found in Clayton's work on "Ancient Timber Edifices."

THE DRINKING-FOUNTAIN MOVEMENT.

London.—In the Green-park, nearly opposite Coventry House, a series of three drinking-fountains has been completed. It is the gift to the public from a benevolent lady of rank, and was designed by Mr. Sydney Smirke, R.A., who likewise superintended its modelling and subsequent execution. In the centre of the composition is a die or pedestal, upon which rests a vase having carved enrichments of fruits and flowers. Below and around the pedestal are three capacious basins, into each of which a stream of water of uniform volume is poured through a lion's mouth. The structure is made of Roach Abbey stone, and was erected by Messrs. Edwardes & Co., of Newman-street, Oxford-street.——In Fleet-street, near St. Dunstan's church, a drinking-fountain has been opened, thus inscribed:—"The gift of Sir James Duke, Bart., M.P., Alderman of this Ward, elected Lord Mayor, 1848," and "Elected Member for London, 1848."

Newbury.—A sum of 40*l.* having been obtained, the work of erecting a fountain here has been commenced. The site chosen is in the centre arch of the Mansion House, facing the church. The basin is of marble, and the water will issue from a tap above it.

Bristol.—Another public fountain is being erected in front of the Counterslip schools, at the top of Temple-street. It is of carved freestone, with a metal basin.

Leek. — Three fountains have been lately erected in Leek. One erected in Buxton-road is the gift of Mr. J. Brough. It is supplied from a pure spring upon the spot, called Buxton Spout. The other two fountains were given by Mr. C. Flint. They are situate in the

centre of the town, one being in the Market-place and the other at the end of Church-street. To this fountain is added the necessary apparatus for watering cattle and dogs.

Edinburgh.—A sum of 90*l.* has been forwarded to the magistrates by Mr. Dunlop, of Brockloch, for the erection of three granite fountains in this city; and the fountain committee have fixed on the sites,—one on the road leading from Princes-street to the Mound, between the East Princes-street-gardens and the Royal Institution; the second at the foot of the Calton-hill stairs at the end of Waterloo-bridge; and the third at the north end of St. Patrick-square. These fountains were all ordered from Aberdeen.

PROVINCIAL NEWS.

Worcester.—At the last monthly meeting of the committee of Lunatic Asylum visitors five tenders were received for the building of the infirmary ward; that of Mr. S. Jones, Lewesmoor, for 2,338*l.* being accepted. There were several other tenders, the highest of which was 3,524*l.*, showing a difference of nearly 1,200*l.* The work was ordered to be proceeded with as soon as practicable. Mr. Warmington is proceeding with the water-tower contract.

Crickhowell.—The opening of the new bridge which has been erected over the river Usk, at Llangrwyney, near Crickhowell, was celebrated by a public dinner, held at Llangrwyney. The bridge has been erected by a proprietary, under the Limited Liability Act, at a cost of 2,378*l.* The principle of the bridge is that of the lattice-girder, the river being crossed by a main span of 145 feet, in addition to which there are two flood arches of 30 feet span each. The whole of the materials used are iron, with the exception of the roadway, which is timber. The contractor was Mr. John Hughes, of Newport: the work has been mostly carried out under the superintendence of his assistant, Mr. John Morgan, who is at present engaged on the Merthyr and Abergavenny railway.

Darlington.—A covered market having been considered necessary for the increasing wants of this town, the Local Board of Health, some few months ago, offered 100*l.* for the three best designs for a covered market, in sums of 50*l.*, 30*l.*, and 20*l.* The result was that there were thirteen competitors, some of whom sent two designs each, and the designs have been exhibited in the Mechanics' Hall, for the inspection of the public.

New Byth (Banffshire.)—Contracts have recently been entered into for the erection of a new school-house and schoolmaster's house at New Byth. The buildings are to be erected after a design furnished by Messrs. Reid, Elgin, and the cost of the buildings will be about 600*l.* The contractors are, for the mason's work, T. Whyte, Pitgair; carpenter's work, J. M'Andrew, Turriff; slater's work, A. Walker, Banff; plasterer's work, R. M'Kenzie; plumber's work, W. Duthie, Banff. The school is to be in connection with the Church of Scotland, and the Privy Council give a considerable portion of the funds necessary for the erection.

CHURCH-BUILDING NEWS.

Islington.—St. Thomas's Church, Islington, was consecrated last week. The church is situate in Hemingford-terrace, a little to the east of the Caledonian-road. The edifice is in the Decorated Gothic style, and consists of a nave and chancel 87 feet long and 27 feet wide, with north and south aisles of about the same length and 12 feet wide. The aisles and west end of the church have galleries, which are approached by stone staircases at the ends of the aisles. The principal entrance to the church is through a deeply moulded and recessed double doorway on the north side. The nave is divided into five bays, supported by columns alternately circular and octagonal, with high pointed arches. The chancel arch, 45 feet in height, is carried one day westward into the nave, at the steps of which stands the stone pulpit, of an hexagonal shape, with carved panels and columns at the angles, with sculptured angels and foliage introduced. At the east end of the chancel, and occupying nearly the whole of the wall, is a large five-light window. At the west end of the church is a large circular window of the same diameter, and filled with tracery. The whole of the windows are filled with green cathedral glass, with white glass borders, except the large circular portion in the east window, which has been filled with stained glass containing the subject of our Saviour's Resurrection, by Mr. Warrington, the gift of the architect, being one of a series of subjects intended to illustrate the life of our Saviour. The whole of the roofs are of stained deal open framing, and the height of the nave is 57 feet. The church is built of Kentish rag-stone, from the design of Mr. Arthur Billing, at a cost of 3,375*l.*

Rochester.—The ratepayers of the parish of St. Nicholas, have resolved to have the church of St. Nicholas altered according to plans by Mr. Gough, architect. The contemplated alterations include the erection of a gallery and re-arrangement of the seats in the body and chancel of the church, by which a number of additional sittings will be obtained. The sum required to make the whole of the alterations will be about 1,400*l.*, to be raised by voluntary contributions. About 500*l.* have been already subscribed.

Elm (Cambridgeshire).—Elm Church, after having been closed some time, was reopened on the 3rd July, by the Dean of Ely. The fittings are in English oak. Mr. S. S. Teulon was the architect, and Mr. Brown, of Lynn, the builder.

Pontardawe.—The Church of Pontardawe, South Wales, according to the *Cambrian*, is now completed. The architect is Mr. Baylis, of Swansea. The style is Decorated Gothic. The pulpit is carved, and embellished with figures of several of the Apostles. The steeple and tower, 200 feet high, are seen from Swansea, a distance of eight miles.

Birmingham.—The want of a commodious place of worship in the rapidly-increasing suburb of Selly Oak is about being supplied by the erection of a church, from designs by Mr. Holmes, of Birmingham, architect. The foundation stone of the edifice has just been laid. The church, according to *Aris's Gazette*, will be cruciform in plan, having a nave 70 feet 6 inches long, and 21 feet 6 inches wide, with north and south aisles, 11 feet 6 inches wide; north and south transepts, 20 feet 3 inches wide, and 21 feet deep; and a chancel, 32 feet long and 20 feet wide; with a vestry and organ chamber on the north side, and an aisle for children on the north. A tower, with a spire, is to be placed at the west end of the north aisle: the height to the top will be 145 feet 6 inches. The extreme height of the nave roof will be 46 feet. Sittings will be provided for 617 persons, viz.—263 free, 172 for adults, and 182 for children. The style adopted is the Early Decorated, and the materials for the walls are to be bricks, faced with Bromsgrove stone, and Bath stone for the tracery, the dressings, and the spire. The nave, chancel, and aisle arches and columns are to be of Bath stone, with Weoley Castle stone introduced in the arches. To improve the effect, marble shafts are to be used under the chancel arch, and in the sedilia. Bands of Weoley Castle stone are also to be introduced at intervals on the inside of the walls, thus forming a contrast to their plastered surface. The roofs will be open timbered, stained, and varnished, and plastered between the rafters, and will be covered with tiles laid in patterns. The seats will be open, no distinction being made in appearance between free and appropriated. It is proposed to fill the principal windows with stained glass: several have been already promised. The work is being carried out by Mr. S. Briggs, of Birmingham.

Latchford (near Warrington).—On Tuesday, the 10th, the foundation stone of the New Baptist Chapel, at Latchford, about to be erected to supply the place of the old "Barn Chapel," at Stockton Heath, was laid by Mr. Aaron Brown, of Liverpool. It is situated in Ackers-lane, near the Warrington and Stockport railway, on a plot of ground purchased from Mr. Barber. It is intended to be of the Italian style, 58 feet by 35½ feet, and will seat, in the body of the chapel, about 240 people. There is to be a gallery for the Sunday School children, and vestries. The cost of erection will be about 800*l.*, towards which 400*l.* have been subscribed by the congregation and friends in the immediate neighbourhood, leaving 400*l.* yet to be raised. Mr. T. Mellard Reade, of Liverpool, is the architect of the building.

Stockport.—The Roman Catholics of Stockport are about to build a new church, near the schools lately erected by Messrs. Hadfield and Goldie, who are also the architects for the proposed church.

Manchester.—The foundation-stone of a new Independent church and schools has been laid, on a plot of ground fronting Chorlton-road, Moss Side, and near to the toll-bar. The total cost, including the site, will be about 6,000*l.* The general plan of the chapel is a parallelogram, 85 feet 6 inches by 40 feet in the clear, with semi-octagonal transepts, 23 feet 6 inches wide by 15 feet 9 inches, and an apsidal recess, 22 feet wide by 19 feet deep at the west end. Behind the church, and at the sides of the apse, are the minister's and deacons' vestries, cloak-room, stairs, corridor, and school-entrances; infants' class-rooms, room for prayer-meetings, and two class-rooms. The school is rectangular in plan, 57 feet by 26 feet, and is on a story above the class-rooms, approached by staircases. The building will be erected in the Decorated Gothic style. The walls are of Yorkshire parrpoint, with Hollinton stone dressings. The east front is divided by buttresses into three portions, the outer compartments being slightly recessed, and having a single-light window in each. The centre division has a large five-light window, the upper part being filled with tracery. Over the large window is a quatrefoil opening, serving as one of the ventilators to the upper part of the roof, and surmounting the whole is a stone cross. The south buttress is made to project, and is pierced with a window, so as to form the side of a porch which gives one access to the church. At the north-east angle of the building is the main entrance, formed in the base of a tower standing out from the main building, measuring, in the interior, 10 feet by 10 feet. The tower has buttresses at the angles, the space left by their intersection being filled by stone splays. The internal entrance to the tower is designed to be exactly central, with a corridor that runs across the church from north to south to the porch entrance before referred to, which corridor gives access to the aisles of the church. The tower is pierced in its upper stages with small rose windows and two-light windows, as well as lucerne lights in the base of the spire, which rises over the whole to the height of 116 feet from the road level. The sides of the church are divided into bays by buttresses, covered with water-tables, and between the buttresses are two-light windows. The visible access to the school is covered with a turret, 60 feet high, which gives character to that portion of the building. There will be red and black paving to the passages. The roof will resemble that of a vaulted building, with groined arches, these terminating on carved stone corbels. The sides of the apse are pierced with windows, intended to be filled with stained glass. The church will have accommodation for about 700 persons. The contract has been taken by Messrs. Young & Co., of Oxford, at the sum of 4,397*l.* 10*s.* Messrs. Poulton & Woodman, of Reading, are the architects who designed and are superintending the erection, their design having been selected by the committee in competition.

Farnworth (Manchester).—The corner-stone of Farnworth New Wesleyan Chapel has been laid. The cost of the building is estimated at 6,000*l.*, the accommodation being to seat 1,200 persons. Mr. Coope, of Leeds, is the architect.

York.—A new Roman Catholic Church is about to be erected in Blake-street, York, on the line of the intended street from the railway station to the Minster. Messrs. Hadfield and Goldie have been appointed the architects.

Glasgow.—The foundation-stone of the Seamen's Chapel, to be erected in Brown-street, by the Glasgow Seamen's Friend Society, has been laid by the Lord Provost. It is estimated that the building will cost somewhere about 1,500*l.*, and it has been designed to accommodate between 400 and 500 persons.

STAINED GLASS.

Gloucester Cathedral.—Messrs. Clayton & Bell, of London, are erecting the glass of the memorial window, in Gloucester Cathedral, to the memory of the late Sir B. W. Guise, bart. The subject is the Coronation of Henry III., which took place in the Cathedral in 1216. The state of England at that time was distracted by the wars of the barons, and it was the interest of one faction to get the king, who was then only ten years of age, crowned as early as possible after the interment of King John at Worcester; and as, in their hurry, they could not send to London for the crown, the youthful king was crowned with a golden bracelet taken from his mother's arm. This will be represented. The window has also the armorial bearings of the Guise family, who claim to be descended from one of the barons who were present at the coronation.

St. Paul's Church, Warwick.—Two memorial lancet windows have just been fixed in this church. They have been executed by Mr. Holland, of Warwick. One light contains a female figure in the act of devotion. The other light represents figures of six children, deceased, supported by angels ascending to Heaven.

Alveston Church, Stratford-upon-Avon.—Two lancet windows have been fixed in this church, by Mr. Holland, of Warwick. The first light con-

tains a female figure as "Resignation," and the other a subject representing "Our Saviour's Ascension."

A VOLUNTEER RESERVE.

SIR,—I beg to send you a proposal for a volunteer "reserve," designed to meet the views of the unostentatious, and men of moderate means throughout the country.

1. That a volunteer reserve be instituted.
2. That this reserve shall require a special call for service in the field.
3. That the annual subscription shall accumulate, and be devoted, in case of danger, to the equipment of those of the reserve desiring to join the regular corps, and also contribute to the support of the National Rifle Association.
4. That the accumulating funds of the reserve be under the management of the National Rifle Association, provided the committee of that institution could in some measure be made representative of the reserve.
5. That the companies of the reserve be attached to the local corps, in the councils of which the senior captain of the reserve companies only shall have a voice, and that only when attached.
6. That the annual subscription shall be one guinea; the uniform a cap, blouse, and belt.

W. CAVE THOMAS.

THE CATHEDRAL OF ST. PATRICK, DUBLIN.

SIR,—It has been frequently stated, and as often denied, that the extensive works here are being proceeded with without efficient professional superintendence, if any. Can any one throw any light on the subject? Or, if the Dean and Chapter and Mr. Guinness have been unjustly accused, can any one name the gentleman or gentlemen to whom has been entrusted the delicate task of renovating and restoring the most perfect remnant of Mediæval glory in this country. DELTA.

*** We have every reason to believe that there is not any architect superintending the works at St. Patrick's Cathedral, although the donation of Mr. Benjamin Lee Guinness for its restoration is 20,000*l.*; and it is understood that if that amount be insufficient, more funds will be forthcoming from the same quarter. The builder (Mr. Timothy Murphy) appears to be proceeding partly on plans made some time ago. The sooner a proper architect be appointed, the better, or Mr. Guinness, instead of doing the good he desires, and gaining the credit his liberality deserves, may find himself justly reprobated or ridiculed for his share in an injurious vandalism.

THE AUTHOR OF "ANCIENT ARMOUR," AND THE TOWER.

SIR,—You may think it unnecessary to reply to Mr. Hewitt's letter in your number of the 7th instant, denying your assertion that he had defended the purchase of forgeries for the Tower. I hope, however, you will not object to receive a few words, in the interest of truth and our national collection, from an outsider. The hardihood displayed by Mr. Hewitt in this letter is nothing less than remarkable. You referred, of course, to the famous winged burgonet, which he now admits not to be genuine. When did he make that discovery? Certainly not till after it had been exposed in the *Builder*, when he had exhibited it *as genuine* at a meeting of the Archæological Institute, and furnished the council with a paper on it, which is printed in their journal (with a plate of the helmet). Upon the notice of it in the *Builder* as a modern fabrication, he wrote a furious letter in its defence, wherein he says, "If there is any point of suspicious work about it, let your correspondent point it out." Was he not aware of the doubt thrown upon it when he so ostentatiously exhibited it? and is not his letter to the *Builder* a defence of it after positive exposure? It is true he abuses the dealers; but as Mr. Falck told him, in *his* letter to the *Builder*, it is the people at the Tower who ought to know what *is genuine*, and therefore not to be taken in by dealers, as they were upon that occasion, and have been, too often; while their constant rejection of valuable and unique articles has shown the utter want of knowledge and discretion in them and their advisers, amongst whom Mr. Hewitt is avowedly the most important, attending sales for them, making journeys for them (*vide* his letter), and now drawing up their "official catalogue," in which, by the by, his determination to ignore Meyrick is curiously illustrated. He is compelled in his preface to mention the re-arrangement of the armoury by Dr. Meyrick, by whom "many improvements were effected;" but at page 6, where he describes the fine suit of Henry VIII. (No. 8), he speaks of the engravings by the late G. Lovell, Esq., published in the "Archæologia," with great praise, but says no word of Meyrick's long, elaborate, and valuable paper upon it, which they were engraved to illustrate! Dr. M. having been the first person who called the attention of the public to this magnificent suit, and the interesting circumstance of its being a presentation one on Henry's marriage with Katharine of Aragon, a suggestion which Mr. Hewitt complacently adopts, without the least reference to the original promulgator.

I repeat that the hardihood shown by Mr. Hewitt in his last letter to you is nothing less than remarkable. A LONDONER.

LE PROPHETE AT COVENT GARDEN.

THE production of Meyerbeer's "Prophète" by Mr. Gye is an event. It is so large and remarkable a work, that all who are interested in good music, good singing, good acting, and good scenery, should see it. Mademoiselle Csillag, although somewhat inferior to her predecessor, Madame Viardot, is an admirable *Fidès*; and Tamberlik, in his singing of *Jean of Leyden*, leaves nothing to be desired. The action of the drama passes, as most of our readers remember, first in Dordrecht and Leyden, in Holland, and afterwards in Munster, about the year 1536. Mr. Beverley has put forth all his strength, and has produced some exquisite pictures; including a scene near Dordrecht, with castle and mill; the frozen lake, with Munster in the distance; a square in Munster, with well in foreground; and the interior of the Cathedral, with preparations for the coronation of the prophet. The excellence of the painting, the number and grouping of the persons engaged, and the dramatic situation, render this latter one of the most remarkable scenes that has ever been witnessed.

The Floral Hall has been again put to use for a flower show. Seen lighted after the opera, the effect is very charming.

PAWNBROKERS AND THE POORER CLASSES.

SIR,—A recent enactment is at the present time causing much angry feeling in some of those districts of the metropolis which are inhabited by the poorer classes. Believing, however, that this measure is likely in some respects to add to the comforts of the poorest class, it may be useful to state the facts. Before the new Act was passed pawnbrokers would receive articles and lend upon them so small a sum as 3d., 4d., or 6d.: in some instances downright poverty compelled persons to take the last remaining article of clothing belonging to themselves or children, and pledge it for the purpose of providing bread or firing; but in the great number of instances these articles of the last necessity were parted with to procure drink, and thus little children were stripped of their last portion of covering of any value: but for this facility many things of the greatest use would have remained in the possession of families. The interest paid upon these trifling loans was in proportion enormous: for all sums under 1s. a halfpenny a month was charged: if the article remained a day or only a portion of a day, the cost was just the same; and in thousands of instances the same article was in this way disposed of and redeemed four or five times in the week. Supposing that 4d. was lent on some article, and pledged and redeemed four times in the week, 2d. would be paid: this, in the year, would amount to 9s. 6d.! How much is this per cent. per annum? Parliament has determined, and as we think wisely, that it shall be no longer legal for pawnbrokers to receive pledges on which they may lend a smaller sum than 1s.; and for this they are entitled, in order to make up for the loss of the profits on the smaller loans, to a charge of one halfpenny on the delivery of each duplicate for goods up to a certain value, and the usual interest of a halfpenny in the 1s. in the month besides. I have made some inquiry about this matter, and believe that, although the profit of the pawnbroker is large, the change will be the means of sparing to many a poor little child articles of clothing, on which the sum of 1s. would not be advanced, but which are of very great use.

In the course of your wanderings in the poorer neighbourhoods you may have met with places called "dolly shops," or "leaving shops," where articles of small value are taken in by unlicensed persons, something in the same manner as they are by the pawnbrokers. The charge for this accommodation is still more enormous than that above mentioned; moreover, these, kept by the worst characters, are places to which young boys and girls are encouraged to take articles which they have come dishonestly by; and it is well known that these abominable places, and also many of the marine storeshops, are a great means, by affording ready facilities for parting with goods, of encouraging crime in the poorer districts.

Now that this change has been made, the police should leave no means at their disposal untried to root out the "dolly shops," and keep up a very close surveillance on certain of the rag-shops. Measures such as these, although they may seem trifling, are all leading to a good end.

A STRUGGLER.

Books Received.

Companion to Hoppus: Hand-Book of Tables for the Use of Timber Merchants, Builders, Shipowners, and Others. By JOSEPH SMITH, of Bristol. Houlston & Wright, Paternoster-row, London.

THESE tables, which occupy ninety-five pages, purport to show the number of Petersburgh standard deals, "and the fractional part of a deal, contained in any number of deals, any length, any width, or any thickness." Also the number of Petersburgh standard deals, &c., contained in any number of superficial feet of ½, ¾, 1, 1¼, and up to 7½ inches thick. We have tested a few of the calculations, and found them quite correct. This said Petersburgh standard gives a deal of trouble.

Country Cottages: a Series of Designs for an Improved Class of Dwellings for Agricultural Labourers. By JOHN VINCENT, Architect. London: E. & F. N. Spon, Bucklersbury. 1860.

MR. VINCENT gives plans for single cottages, with two bedrooms, and three bedrooms for double cottages; a group of three cottages, a group of four cottages, sections, plates of details, and six perspective views of the designs. The cottages are mostly a little too expensive, the cheapest pair, with only two bedrooms, costing 250*l.*; but the designs are tasteful, and the book is so nicely got up, that our impulse was to give our commendation without qualification. Looking a little closer, however, an unlucky blot becomes observable, which may not be passed by. So little attention has been given to the staircases, that in several of the designs they would be useless. In plate 7, for example, there would not be 4 feet 6 inches headway, the result of which is, that the bedrooms could not be formed as shown. The author says of sections,—"These constructional drawings, though necessary to the builder, are very uninteresting even to professional persons." If he had taken a little more interest in the section he has himself given on plate 9, he would have seen at a glance the error he has unfortunately fallen into.

Mr. Vincent has prefixed some observations on the earnings and condition of agricultural labourers, and gives a table of their wages in twenty-nine English counties. The pith of his remarks is contained in this extract:—

"The interest of the resident population, no less than that of the proprietor, dictates that no cottages should be added to those already built in a parish, in which the numbers are in excess of profitable employment; as any surplus, however small, must inevitably depress the whole community, and reduce them to a low level of wages. It not unfrequently happens that in one county there is ample and remunerative employment for the whole class of labourers, while in an adjoining county (and even sometimes in a neighbouring parish) the lowest rate of wages is paid. And this state of things continues, when a free circulation of labour would benefit all parties. Every independent labourer moved away would make room for a pauper: the hands that are wanted for the extension of commerce and manufactures would be supplied; the ratepayers relieved; and pauperism restricted to the tender in years, the enfeebled by age, and those incapacitated by mental or bodily infirmity."

While, in Wiltshire, say, a man could with difficulty get 8s. a week, he might be able, in the West Riding of Yorkshire, to obtain with ease 15s. or 16s.

The Edinburgh Review, July, 1860. Longman & Co.

IN this No. of the *Edinburgh* there are several very interesting articles, especially a review of Chevalier On the Probable Fall in the value of Gold, and one on Mrs. Grote's "Memoir of the Life of Ary Scheffer."

The reviewer of Chevalier's work differs from the author on some essential points, and discusses

questions which the author leaves untouched. The gold movement, he conceives, whatever may be its effect in particular cases, will, on the whole, operate favourably for the industrial classes of society, by throwing into their hands an increased share of the purchasing power of the world. But during the transition how will it operate—how is it operating?—these are the more pressing questions of the moment. Is it not already raising prices faster than wages? May not the recent advance in prices be at least to some extent attributable to this cause? The reviewer differs from Chevalier on this point, but here we cannot help differing somewhat, not only from the author but also from the reviewer, who says:—

"If the prices of the labourer's provisions and clothing rise, this result can only happen (assuming that the rise proceeds from an abundance of money) because more money is spent on these commodities; and, inasmuch as the labouring classes themselves immensely outnumber all classes who consume the same commodities, it is plain that it is *their* expenditure, and consequently *their* wages, which must substantially *regulate the rise*. The rise in wages, in short, is (where it proceeds from an abundance of money) the *cause* of the rise in the price of commodities, and consequently cannot be preceded by its own effec ."

No doubt this must be true, strictly speaking, so far as it goes; but when did ever wages rise as fast as prices? Does not experience show that when provisions rise, from whatever cause, wages are not necessarily raised in the same proportion? — not that an upward movement of wages, as Chevalier remarks, does not *follow* a continued dearness of provisions, but in the majority of employments it follows slowly and far behind. The reviewer, as we see, considers that the rise in prices always *follows* on the rise of wages—not that the rise in wages is what follows on the rise of prices, in the case of an abundance of money. But is it not more probable that the sequence will be twofold and reactive? That not only will the rise in wages *cause* a rise in prices, but this consequent rise in prices eventually cause a further rise in wages? All such questions, however, are really of less pressing moment to the working-man than the one great question,—how often and how long will the rise in wages lag behind the rise in prices? Doubtless there will be occasional or partial falls in prices too; but for the next twenty or thirty years,—for the life of the coming generation, in short,—it is Chevalier's opinion that there will be a *tendency* at least to depression of the state of the necessitous working classes, in accordance with the depreciation in the value of gold, which both author and reviewer think will probably be all that time in progress. Nor is his prospect even then, according to Chevalier, by any means so bright as the abundance of gold would induce the belief of; for his opinion is that then,—at the close of this era of anxieties and trials,—he will only be placed substantially in the same position as at present.

But it is not the operative class alone who are expected to suffer at least temporary inconvenience from the depreciation in the value of gold from its increasing abundance: many others will also suffer, and especially those whose incomes consist in fixed sums of money, or whose property depends on fixed contracts expressed in the current gold coin of the realm. Thus, if the fall in the value of gold go on till it be 50 per cent., that would indicate a loss to such persons of one half their incomes, unless, as is likely, compensatory modifications take place in the mean time.

The impending changes, as the reviewer remarks,—

"Will in many instances increase, instead of mitigating, existing inequalities of condition. They will enrich the cosmopolitan merchant at the expense of the petty trader. They will enrich the commercial classes, as a whole, at the expense of possessors of fixed incomes, of the professional classes, and of salaried *employés*. Landlords will probably, on the whole, be gainers: they will lose temporarily where the outstanding leases are long, but they will gain permanently through the lightening of their fixed incumbrances; the balance of gain being obtained by encroaching on the incomes of their mortgagees. The tendency of the movement, as amongst the middle and higher portions of society, will thus be to aggrandise the wealthy at the expense of the indigent; to tax the more liberal and enlightened, for the benefit of the more narrow-minded and selfish; to enrich those whose command of wealth is, perhaps, already somewhat in advance of their sense of its responsibilities, from the means of classes at once more necessitous and more cultivated. These are the evils of the change; and against these we have to set the benefit to the working classes, and the ultimate gain to the world, from the opening of new and fertile regions to man's industry, and the extension of his dominion over the earth."

That the influx of gold is neither an unmixed good nor an unmitigated evil, in short, there can be little doubt. Even to those who reap of and enjoy the abundant harvest the advantage is in itself by no means an undoubted one; and, should the working classes fail to derive all the benefit promised by the reviewer, he himself gives them this consolation, that,—

"It cannot be denied that the sudden introduction of higher rates of wages and more ample means amongst the working classes often tends to their own destruction. The temptation of money inflames the worst passions of their nature for drunkenness and debauchery in men, for dress and frivolity in women. It militates against those homely virtues of thrift and self-restraint which most effectually elevate the condition of mankind as intelligent and moral beings. Experience proves that it is not amongst those who have the most money at their disposal that the best examples of manly independence are to be found. The highly-paid pitmen and navvies of this country are the most brutal portion of the community: the gold of the Australian diggers is too often frittered away in reckless sensual indulgence; and, although the wages of labour are far higher in the United States than they are in Europe, we question whether the moral standard of the population can sustain an equally favourable comparison. It may, therefore, be doubted whether the physical improvement resulting from the greater diffusion of gold will be sufficient to outweigh the concomitant evils, and we are far from regarding these evils as either few or trifling."

Meantime, however, there are not yet many unequivocal signs of the pending depreciation in the value of gold. For eight years the golden stream has been flowing, and not less than 200,000,000*l.* sterling of metal have already been added to the common stock. The annual supply is now 38,000,000*l.* sterling, or one-tenth of *all* the gold obtained in the principal field of supply throughout the whole period from the discovery of America down to the year 1848, when the annual supply had increased from 2,500,000*l.*, at the beginning of the present century, to 8,000,000*l.*,—itself a very moderate sum compared with the 38,000,000*l.* of annual increase which now takes place, and which is expected to continue for at least twenty years to come.

VARIORUM.

Part I. of vol. iii. of the new series of the "Proceedings and Papers of the Kilkenny and South-east of Ireland Archæological Society for the year 1860, Twelfth Session," has been issued. Besides the general proceedings of the Society, it contains portions of papers on Money in the time of Charles I., with illustrative engravings, and on the Barony of Idrone, in co. Carlow.——Some account of the works contemplated by "The Bombay Elphinstone Dock Company (Limited)" has been printed, in the shape of a pamphlet, at the Education Society's Press, Byculla, at Bombay. A "Plan for Improving the Shipping Accommodation of Bombay, and the Reclamation of Back-bay Shore, by Robert Fairbairn, C.E.," accompanies the letterpress.——We are glad to observe that "The Law Amendment Journal," being the proceedings of the Society for Promoting the Amendment of the Law—so much needed on many points,—is progressing. The number for the 12th July, which happens to be before us, contains a report of the annual dinner, at which the veteran law reformer, Lord Brougham, presided.

Miscellanea.

THE AREA OF THE BANK OF ENGLAND.—We have been asked to settle a dispute by stating the quantity of land covered by the Bank of England. It is not our province to settle such disputes, but as a misconception prevails on the point in question, we will not refuse reply. We learn from the best authority that the building covers three acres of land, within nine or ten yards.

DOCKS NOT RATEABLE.—MERSEY DOCKS AND HARBOUR ROAD *v.* JONES AND OTHERS.—In this case the Court of Common Pleas, by a unanimous judgment, has reaffirmed the principle laid down in the "King *v.* The Inhabitants of Liverpool," to the effect that the Birkenhead Docks are not subject to be rated, on the ground that the property is held and applied for the public interest.

THE SUMMER DRESS OF THE POLICE.—Many have been the complaints which have reached us of the discomfort, in the hot weather, of the leather stock, the closely-buttoned coat, and unwholesome hats, of the guardians of public peace. Remonstrances have been made, but closed are the ears of metropolitan authorities. We are glad, however, to learn, that the magistrates of the county of Kent have adopted a reasonable dress for their section of the police in the summer heat. The dress now in use there consists of a loose tunic of blue serge, with trousers to match, and light straw hat: the suffocating stock too has been done away with. This intelligent change, which has been carried out on the recommendation of Captain Ruxton, the superintendent of the Kentish force, is worthy of imitation elsewhere.

JAPANESE KNOWLEDGE OF MAGNETISM.—The Japanese have discovered that a few seconds previous to an earthquake the magnet temporarily loses its power, and they have ingeniously constructed a light frame supporting a horse-shoe magnet, beneath which is a cup of bell metal. The armature is attached to a weight, so that, upon the magnet becoming paralyzed, the weight drops, and, striking the cup, gives the alarm. Every one in the house then seeks the open air for safety.

THE NORTH-WEST LONDON PREVENTIVE AND REFORMATORY INSTITUTION.—The annual meeting of this institution was held on Friday, the 6th instant, in the hall of the Reformatory, Euston-road; the Earl of Shaftesbury in the chair. The report states that the number of inmates in the institution is now 110, and that inducements are held out either in diet or accommodation for them to prefer the reformatory to the gaol. The course of training to which they are subjected is calculated to encourage self-respect and self-control, and continues about twelve months, when they are either sent out to Canada or assisted to provide for themselves in this country. The committee rejoice to state that the general working of the institution is most satisfactory. In addition to the asylum for voluntary adult inmates is a juvenile industrial school, certified under Mr. Adderley's Act, for fifty lads, and provided with masters skilled in various useful trades, which are taught.

THE TIMBER TRADE OF BRISTOL. — Messrs. Barnes and Sons, in their monthly circular for July, say: "We have to report an unprecedentedly small importation for the month of June. The consumption has been fairly maintained, and the stocks are now lighter than they have been in this market for a considerable period, all which tends to an active and profitable season for the importers. The arrivals for the past month have been 5 vessels, 1,683 tons register (against 16 vessels, 8,830 tons for the corresponding month last year), and consist of 2 from Danzic, 894 tons; 1 from Memel, 437 tons; and 1 from Wyborg, 175 tons; and 1 from Dramen, 177 tons; showing a decrease of 11 vessels, 7,147 tons register, compared with the corresponding month last year. For the season commencing February 1st, 1860, to the present time, there have been 23 vessels, 8,457 tons register, arrived, against 39 vessels, 18,411, for the same period last year, showing a decrease of 16 vessels, 9,954 tons register."

SOCKET JOINT PIPES.—Sir: I perceive it is discussed in your pages as to how long socket-joint pipes have been made in this country. I cannot assist in clearing this question, but I can prove them to have been made long before the modern application or invention of the socket-joint. In under-pinning some cottages in this town two or three years ago, I came upon an old drain of red socket-joint pipes, one foot long and full two inches in the bore. They were as perfect as when laid down, and bear strong and evident marks of having been made on the potter's wheel. The tiles were four or five feet from the surface, and far below the foundations of the cottages. I should have concluded they were for conveying brine or water, but no cementitious matter was in the joints. I shall be happy to forward one or two to the Kensington Museum, if the curator thinks them worth accepting. The date of the tiles I cannot guess at, but they are very perfectly made.—J. SMITH, Droitwich.

NEW ACT ON PUBLIC IMPROVEMENTS. — The new Act which has just received the Royal assent and is now in force provides for local improvements beneficial to the health and comfort of the people. The ratepayers of any parish maintaining its own poor, the population of which, according to the last account, exceeds 500 persons, may purchase or lease lands and accept gifts and grants of land for the purpose of forming any public walk, exercise or play-ground, and levy rates for maintaining the same, and for the removal of any nuisances or obstructions to the free use and enjoyment thereof, and for improving any open walk or footpath, or placing convenient seats or shelters from rain, and for other purposes of a similar nature. The Act may be adopted in boroughs. After the adoption of the Act a meeting of the ratepayers is to take place, to make a separate rate, and such rate is to be agreed to by a majority of at least two-thirds in value of the ratepayers assembled. Previous to any such rate being imposed a sum in amount not less than at least one-half of the estimated cost of such proposed improvement shall have been raised, given, or collected by private subscription or donation. The rate is not to exeeed 6d. in the pound.

ELECTRO-TELEGRAPHIC PROGRESS.—Mr. W. P. Piggott, says the *Photographic News*, has laid and satisfactorily worked an experimental cable between Ryde, in the Isle of Wight, and Alverstoke, on the main land, which cable has the remarkable peculiarity of being uninsulated, and of having neither india rubber nor gutta percha in its composition.

THE TOWN DRAINAGE OF MONTROSE.—It has been resolved by a joint committee, named by the police board and by the inhabitants, to consult Mr. Leslie, C.E., as to the most eligible mode of draining the town, and to put into Mr. Leslie's hands the plans of Mr. Thomson, and other information already obtained. Mr. Burnes, says the local *Review*, proposed to apply for a copy of the Government survey of the town, which, he said, would be useful in furnishing or verifying the levels of the ground. Mr. Millar thought there could be no doubt about the levels; and, after consideration, Mr. Burnes agreed not to press his proposal.

THE NEW TINTS.—The attention of dyers is just now directed to some new tints which have been brought into the market. The colouring matter for these fine shades is extracted from gas tar, and several analytical chemists are busily engaged in prosecuting an investigation into the qualities of the new agent. A considerable amount of business is doing in the new shades by dyeing houses in France, also in Leeds, Bradford, and Halifax. The French call the colouring matter by the terms Magenta, or Magent. Mr. Coleman's, which is somewhat different, is called Dianthine. The colouring matter, which is a liquid, is applicable in dyeing worsted, silk, and cotton. In the finer shades, as crimson and rose, cochineal, it is said, cannot approach it in brilliancy; and even saffron yields a tint flat and thin compared with the new element. The shades range from a deep purple to a brilliant rose. The great object the dyers have now in view is to discover some mordant that shall perfect the process.

MAUSOLEUM FOR THE GORDONS OF CLUNY.—A mausoleum which has been erected near the Episcopal chapel of St. John, at Edinburgh, for the Gordons of Cluny, is described in the *Scotsman*. It is in the Early English style, and is some 26 feet in height, 24 feet in length, and 12 feet in breadth. The front elevation shows three pointed arches, with mouldings, springing from pillars with small shafts of polished red granite, and decorated with floral capitals, the arches terminating in pointed gables, decorated on each side with crockets, and finished with finials. The mausoleum has a ribbed stone groined ceiling, the ribs being supported on both sides by ornamental corbels. Entrance to the vaults is obtained by the arch openings. The interior wall has three polished tablets of grey granite, with gold letters recording the names of the Gordons interred below. The "skewputs" (at the angles of the building) are ornamented with masks, male and female alternated. Three grotesque masks in front form gurgoyles. The mausoleum is of Binny stone, and was designed by Mr. David Bryce, R.S.A. The sculpture work was executed by Mr. P. B. Smith, of Dean Park.

INTERESTING ARCHÆOLOGICAL DISCOVERIES AT ELEUSIS.—The famous temple of Ceres has been unearthed, according to the newspapers. "The excavations of Eleusis," says a letter from Athens, "have just been for the present terminated. The temple of Ceres is completely disinterred, and a number of articles connected historically with it and with the *fêtes* of Eleusis have been brought to light. Among others are the propylea of which Cicero makes mention in his letters, and a magnificent marble statue, to which only a left arm is wanting, and which represents Antinous, the favourite of the Emperor Adrian. This statue is the size of life, and is considered a likeness from nature." A vast court, paved with marble flags, lies in front of the temple. A large cubic altar has been brought to light, standing in its original place, and adorned in front with the *torches* of Ceres and Proserpina *crossed*, and surmounting the inscription, AXAIOI. The famous sacred well, Kallichoros, mentioned in the thirty-eighth chapter of the first book of Pausanias, has also been found, at least M. Lenormand, the excavator, thinks so, since he has discovered, in a grotto, situated between the first and second of the sacred enclosures, a well, partly cut in the rock, and partly built of large hewn stones, bordered with sculptured marble at the top. A kind of crypt or sepulchral hall has also been discovered, coated with green stucco, and filled with the bones of the animals sacrificed to Ceres. The excavations are said to have been carried out at the cost of the French Government.

INSTITUTION OF MECHANICAL ENGINEERS: ANNUAL PROVINCIAL MEETING.—The annual provincial meeting of this institution will be held in Birmingham on the 8th, 9th, and 10th of August next, when many engineers are expected to attend from different parts of the kingdom. Papers on engineering subjects will be read and discussed, and a conversazione held. A local committee, of which Mr. William Matthews is the chairman, has been appointed.

CAIRNCONAN EXCAVATIONS.—Excavations, says an Arbroath paper, have been going on at these interesting objects of antiquity, and in addition to curious works previously discovered, an entrance has been found on the north, which connects the round or beehive-shaped house with two other passages. One of these passages stretches towards the north-east, and the other towards the north-west. Both are upwards of 6 feet deep, and, so far as traced, the former is about 16 feet long, and the latter about 48 feet. It is to be feared that some time may elapse before the work is resumed, in consequence of a want of funds.

DISCOVERY OF ROMAN REMAINS AT ROCHESTER. In recently excavating the foundations for a new inn at Cuxton, on the site of the White Hart, the workmen dug up a quantity of Roman pottery, probably the remains of a sepulchral interment. It consisted of five or six pateræ and cups of the red glazed ware, commonly called "Samian," an urn (which probably contained the burnt bones), and a smaller urn-shaped vessel in dark-coloured clay. Two of the red dishes bore the potters' names, one of which was imperfectly stamped and illegible. The other is Maternus, a name which occurs in the list of Roman potters' names found in the late excavations made in the city of London, and published by Mr. Roach Smith in his "Collectanea Antiqua." The vessels discovered are now in the possession of the Earl of Darnley.

MR. TRAIN'S HORSE RAILWAY AT BIRKENHEAD.—The operations in connection with the construction of the horse railway from Woodside Ferry to the Birkenhead Park were commenced on Tuesday in last week, at the Park entrance. The Ebbw Vale Company, says Mr. Train, have agreed to deliver the iron in July: Messrs. Crowe & Williams are preparing the timber: Mr. R. Main is at work on the carriages, to be ready in August: Mr. Chas. Burn is the contractor, under the engineership of Mr. Samuel, of London, and Mr. Palles, of Philadelphia, the resident engineer. In September, the Birkenhead Street Railway Company, Limited, will issue excursion tickets from Liverpool to Birkenhead Park and back for 6d.

GAS.—By the Bill before Parliament it is proposed that inspectors shall be appointed with very extensive powers of supervision over the gas companies. Should the Bill become law these officers will hear all complaints made against the companies, for which purpose they are to hold a meeting at least once every month. They will also be empowered, without giving notice to any one, to test at any time both the quality and the quantity of the gas supplied by any company, and to enter upon their premises and examine their works. If in any case the gas is found to be deficient in illuminating power, of which a fixed test is prescribed by the Bill, the company which supplies it shall be liable to a penalty of 50*l*., to be recovered by summary conviction before a police magistrate, with a further penalty of 10*l*. a day so long as the offence continues. It is also proposed, or provided, in the Bill, that "The metropolitan gas inspectors shall inspect and audit the accounts of each of the gas companies to which this Act applies, at least once in every year; and the companies shall lay before the inspectors at every such audit their accounts for the year preceding, accompanied by proper vouchers, and submit to their inspection all books, papers, instruments, and writings belonging to the companies relating to their accounts; and the inspectors shall audit the accounts, and may examine any of the directors or officers of the company whom they shall think fit; and they may summon before him or them any such director or officer for the purpose of the examination, and may take the examination upon oath, and administer an oath, to the person summoned." A subsequent clause in the Bill—the forty-eighth—empowers the inspectors, whenever they find that any company has earned 8 per cent. upon their paid-up capital, to oblige them to reduce the price of the gas supplied by them to the amount of sixpence for every thousand cubic feet.——At Wigan the gas company have resolved on a reduction in the price of gas of 3d. per thousand cubic feet, thus lowering the net price to large consumers to 3s. 4½d., and to all other consumers to 3s. 9d.

THE GUESTEN HALL, WORCESTER.—We understand that Mr. Christian, architect to the Ecclesiastical Commissioners, has made a survey of the Guesten Hall, in this city, in order to report to the commissioners upon its actual condition, and the outlay which its restoration would require. It is stated that the expense of making the roof good, tying it with iron rods, patching the walls, and restoring the windows (without, however, restoring the west end or the porch), would be about 1,700*l*. or 1,800*l*.: if the west end be restored with the porch and turret, the cost would reach nearly 3,000*l*.

FLOATING HARBOURS AND BATTERIES.—A cheap mode of constructing wooden floating breakwaters, &c., is now under the consideration of Lord Clanricarde's committee of the House of Lords. From printed particulars it appears that the design is that of Captain Adderley Sleigh. The system proposed consists of the use of floating structures, built according to the method adopted in the construction of ships, hollow, water-tight, drawing about 3 feet of water, their bottom broad and flat, and the seaward side of them presenting to the sea a decked plane inclined inwards at an angle of from 12 to 15 degrees from the sea level, and rising upwards from the line of floatation at the same angle to the height of about 12 feet; and the decked plane descending in like manner at the same angle below the water to a depth of about 10 feet, the whole being moored from that extremity. It is in principle a *wedge*, of which the point is moored seaward, and it resembles an artificial beach. The cost, it is said, would only be 60*l*. per yard, instead of 1,000*l*. as the cost of stonework. As outer defences, such wedge-shaped floats, it is conceived, would be useful, as shot would glance off them as they do off the surface of the ocean itself. Coir cables are recommended for anchoring the structures. Wind, it is urged, would be deflected as well as waves by the inclined planes presented to seaward, thus securing quiet harbours to landward by means of such breakwaters. No difficulty as to security in mooring is anticipated.

UNPICKABLE AND GUNPOWDER-PROOF LOCKS.—An invention, patented by Mr. Price, of Wolverhampton, which we have lately seen, seems to be an effective one, and well adapted to the purpose in view. It is called the double patent *ne plus ultra* lock, and is warranted unpickable against every mode of picking, and also proof against repeated charges of gunpowder, as two dwts. are said to be the most that can be hammered into it. "The hardened steel nozle," says Mr. Price, "prevents the keyhole being enlarged, and the spindle of the knob being case-hardened, and working in a rebate with a shoulder inside, prevents gunpowder being got into the lock-chamber by breaking the spindle." These and other important improvements in locks and safes are secured by his patents of 1855, 1859, and 1860. Mr. Price has published a document with numerous names of military men, engineers, and others, who witnessed the experiments with gunpowder at Burnley in April last, from which it appears that it was not this lock at all into which gunpowder was introduced so as to explode it on that occasion, the safe produced by his opponent, after every attempt on the right one had failed, being an old one, though of Price's make; and that Mr. Price and his agent and friends repeatedly protested against its introduction, or any operation on it, as a test of the properties of Price's gunpowder-proof locks and safes.

BUILDERS' DINNERS.—Sir: Seeing a notice in your last of the annual dinner of Mr. Jay's men, and entirely concurring with your correspondent in respect to the advantageous results of the annual festivities where, by the aid of (I suppose I must call them) the good things of life, masters and men get into such good humour with each other, as, at least for the time, to forget there is any distinction between them, I wish to record the fact that on Saturday last the men in the employ of Messrs. Evans, Brothers, builders, had their annual dinner (at the Rye House), when this happy state of things was fully realized. This desirable result, however, was not entirely due to the consumption of "creature comforts," but was rather the effect of the expression of kindly feelings. One of those present, who replied for the toast, "The Gentlemen Visitors," indignantly repudiated the invidious distinction, and showed that employers, particularly those of small capital, who took an active part in their business, were clearly entitled to call themselves working men, as they generally worked, if not harder, at least more hours than the majority of their assistants.

ONE OF THE COMMITTEE.

THE BRONZE COINAGE.—Mr. Hopwood has asked in the House of Commons, when the bronze coinage would be issued. The Chancellor of the Exchequer said he was informed the Master of the Mint was prepared to proceed with the striking of the coin almost immediately; but some time would necessarily elapse, after the striking of the coin, before the issue could be commenced. It was necessary that about two months should elapse to have a sufficient accumulation before they commenced the issue; and therefore the issue would probably take place about the end of September.

DEATH FROM THE FALL OF A GALLERY.—An inquest has been held at the Clerkenwell Workhouse on the body of William Mavity, aged 27, who died from the effects of injuries received by the falling of a gallery in the St. George's Hall, St. George's-road, Southwark, on the 17th of April last. The evidence showed that at a pugilistic exhibition a number of people crowded into the music-gallery, a place constructed only to hold about twelve, and the gallery broke down, and Mavity, among others, fell and was crushed by a beam. He was at Guy's Hospital for nine weeks, and was afterwards removed to his own house, where he died. The jury returned a verdict of "Accidental death."

ACCIDENT AT THE RATCLIFF GASWORKS, SHADWELL.—A sad accident has just occurred at these works, whereby one person lost his life, and several others were severely injured. For some time past workmen have been engaged in the erection of a new gasholder, capable of containing 80,000 cubic feet of gas, and which was so far completed as that the holder, being finished, was suspended by chains attached to the pillars which were to be its permanent support, and which were some 60 feet in height. It was raised by means of these chains to the height it will attain when full of gas, in order that the workmen might finish off some of the points which could best be done with the holder in that position. There were a number of workmen employed about it; some of them at the top of it, some of them on the pillars to which the chains were attached, and a considerable number were employed in various ways on the ground outside the tank; when, with a crash which resounded throughout and alarmed the surrounding neighbourhood, the holder frame became detached from the chains suspending it, which snapped into a hundred pieces, and fell a distance of 12 feet into the bottom of the tank, while the pillars, some of them smashed into half a dozen pieces, swayed outwards and inwards, crushing and scattering the workmen in all directions.

EXTRA PAYMENT TO PUSH ON A CONTRACT.—*Swansea County Court.* Joseph Downing, contractor, *v.* Robert Morris, contractor.—The action was for the recovery of 37*l.* 6s., for work executed. 19*l.* 6s. had been paid into court. The dispute was a difference of 3d. per yard. Mr. Joseph Downing deposed: I have been doing mason's work in the half-tide basin for defendant, and continued the work until the contract was taken by the Harbour Trustees. The price for the masonry was 2s. per cubic yard, with the rubble backing. The materials were to be delivered to me, but some we were obliged to wheel about 300 yards, and Mr. Morris agreed to give me 2s. 3d. per yard.—Cross-examined: Mr. Morris told me the price was too high. I reduced my men one half after it had been agreed to give me 2s. 3d.—Re-examined: When I gave in my tender to Mr. Robert Morris it was on the understanding that I should do all the masonry: what I have done is the most expensive work.—Mr. R. Morris, the defendant, said that the first agreement was for 2s. per yard, and he made no other agreement whatever. Plaintiff told me the materials were not delivered on the spot as required, and I told him that as the trustees were to take possession of the work at the end of the month, I would give him 3d. extra per yard if he would push on the work as much as he possibly could. No sooner, however, had I agreed to this than Mr. Downing reduced his men one half. The advantage which I should have received had the work been pushed on was, that I should have used all the materials on the ground. I should have gained about 4s. for every yard executed by Mr. Downing. He having failed to push the work on, he is not entitled to the extra 3d. per yard. It was not necessary to pause occasionally to allow the wall to "set." The judge remarked that some of the work had evidently been executed before the new agreement to give 3d. extra per yard had been entered into, and under these circumstances the plaintiff could not sustain the action for the full amount claimed. He gave a verdict for plaintiff of 9*l.*, in addition to the sum of 19*l.* 6s. paid into court.

CATTLE SHOW DECORATIONS AT CANTERBURY.—The Royal Agricultural Society have just held their usual meeting and exhibition, this year at Canterbury; and the city appears, from the local papers, to have been effectively decorated for the occasion. Mr. Clarke, of Gloucester, architect, who has superintended extensive decorations in other places, was engaged by the committee, having been recommended for that purpose by Mr. H. Manning, the contractor for the erection of the sheds and other works in the show-yard. The intentions of the committee only comprised the erection of three triumphal arches—one at the top of North-lane, another in High-street, in front of the Guildhall, and the third on the site of the old city gate at St. George's, together with the decoration of the public buildings. In addition to those named, however, four other arches were put up by private subscription among the inhabitants of different parts of the city—one in High-street, near the Corn Exchange, one in Northgate, one at the end of St. Margaret's, spanning both at St. Margaret's and Watling-street, and one near the toll-gate at St. Dunstan's.

BATHS AND WASH-HOUSES.—The report of the Commissioners for Public Baths and Wash-houses in the parish of St. James's, to the Vestry, states that the additions rendered necessary by the increase of business at the establishment in Marshall-street have been for some years under consideration; and it was felt that a decision upon the subject should be no longer delayed. It was necessary to raise an additional sum of 6,000*l.* under the provisions of Sir H. Dukinfield's Act, and to appropriate two houses belonging to the parish to carry out the proposed improvements. At a meeting of the Vestry, held on the 28th ult., Mr. Geesin stated, with respect to the financial position of the undertaking, that it was in a perfectly solvent state, and that this was entirely owing to proper management. The Rev. J. E. Kempe, the rector, remarked that it was not a financial question alone; for it had been shown that great moral and social improvements would follow. After some further discussion on the subject, the motion for the adoption of the report was carried. In 1859, 100,133 baths were taken, and women availed themselves of the wash-house on 40,900 different occasions at the Marshall-street establishment. The gross receipts amounted to 2,292*l.* 10s. 8d., and the working expenses to 1,772*l.* 10s. 7d. In 1848, two establishments were open in the metropolis, and the receipts for bathing and washing then amounted to only 2,806*l.* 5s. 1d.; in 1855, at thirteen establishments, to 24,526*l.* 7s. 2d. We may add that, from 1848 to 1855, the very considerable sum of 113,541*l.* 1s. 5d. was received at the public baths and wash-houses in London alone.

HOLYHEAD HARBOUR OF REFUGE.—On the 16th the Earl of Mayo moved, in the House of Lords, for a select committee to inquire into the state and efficiency or otherwise of the new refuge harbour at Holyhead, and the cause or causes of the number of wrecks that occurred therein during last year;—also to inquire into the plan as now sanctioned by the Admiralty for the construction of a packet harbour for the accommodation of the large class of steamers about to be employed for the Irish mail service.—The Duke of Somerset said he believed that the first outline of the plan proposed by the late Mr. Rendle, if carried out, would have given a much better harbour than the present one, at a much smaller cost, but the question was the actual state of the harbour at present: Was this harbour a bad one as a harbour of refuge? Now, according to the report of the officer in charge of the harbour as to the effects of the gales on the 25th and 26th of October last, it appeared that none of the fifty-six vessels which at that time were riding within the harbour sustained any material damage, except four or five which had been fouled by a vessel that had lost her anchor off Liverpool, and had run into Holyhead harbour for security. Under these circumstances he did not think there was any foundation for the assertion that Holyhead was not a harbour of refuge, and the Admiralty were disinclined to assent to any further expenditure.—The Marquis of Clanricarde observed, that what was required was a vigorous exertion to overthrow an expenditure of millions of money. The Government justification for that expenditure was, that it was incurred under the direction of the most eminent men; but he believed it would be found to be a total waste of public money.—Earl Granville said it was impossible for any one who was acquainted with Mr. Rendle, not to be aware of his singular clear-headedness with regard to any sort of business.—The Earl of Mayo, after a brief reply, withdrew his motion.

PREPARATION OF BOXWOOD.—Those of your readers who may be desirous of extending their knowledge, afforded by your article "On the Preparation of Boxwood," would do well to visit the South Kensington Museum, where, in a glass case in the Educational Department, they will find a good illustrative series of boxwood blocks exhibited by Mr. Scott, of Whitefriars-street, Fleet-street, a practitioner of this said-to-be mysterious art.

VERITAS.

TENDERS

For house at Wimbledon, for Mr. John Reeve. Mr. John Giles, architect. Quantities supplied by Mr. James Barnett:—

Macey	£6,297 0 0
Lucas	6,257 0 0
Jackson & Shaw	6,025 0 0
Higgs	5,987 0 0
Batterbury	5,969 0 0
Piper & Sons	5,900 0 0
McClyment	5,873 0 0
Patman & Co.	5,796 0 0
Patman	5,759 0 0
Ashby & Sons	5,689 0 0
Mansfield & Sons	5,676 0 0
Brown & Robinson	5,514 0 0
Hardiman & Co.	5,490 0 0
Hill	5,470 0 0
Adamson & Sons	5,400 0 0
Downs	5,349 0 0
Myers	5,268 0 0
Wilson	5,237 0 0
Welshman & Gale	5,195 0 0
Aviss & Sons	5,134 0 0

For the new passenger station at Redcar, for the Stockton and Darlington Railway Company. Mr. Wm. Peachey, architect; by whom, also, the quantities were supplied:—

Bulmer	£6,000 0 0
Marren	4,179 9 3½
Robson	3,871 0 0
Armitage	3,860 0 0
Chapman	3,824 0 0
Wilkinson	3,729 0 0
Pearson (accepted)	3,716 14 11

For restoring the clerestory and internal stonework and for re-fitting St. John's Church, Chester. Mr. R. C. Hussby, architect. Quantities supplied by Mr. T. M. Rickman:—

		Add for Tracery in Roof.	Allow for old Materials exclusive of Lead.
Haswell	£5,796 0 0	£88 0 0	£171 18 0
Stone	5,480 12 9 ..	33 2 8 ..	215 15 0
Hitchen	5,400 0 0 ..	45 0 0 ..	110 0 0
Roberts	5,188 0 0 ..	80 0 0 ..	130 0 0
Lockwood & Co.	5,160 0 0 ..	50 0 0 ..	100 0 0
Hughes	4,279 0 0 ..	68 10 0 ..	95 0 0
Owens	4,050 0 0 ..	29 0 0 ..	199 0 0

For residence and warehouse at Leytonstone, for Mr. R. Payze. Mr. D. A. Cobbett, architect:—

Saville	£3,415 0 0
Dove (Brothers)	3,103 0 0
Conder & Son	2,854 0 0
Reed & Son	2,739 0 0
Ashby & Horner	2,735 0 0
Newman & Co.	2,723 0 0
Arber	2,709 0 0
Rivett	2,673 0 0
Hedges	2,657 0 0
Hill	2,649 0 0

For villa at Moseley, near Birmingham, for Mr. Isaac Ford. Mr. Edward Holmes, architect. Quantities supplied:—

Hardwick	£2,684 0 0
Briggs	2,590 0 0
Barnsley	2,530 0 0
Matthews	2,457 0 0
Jones (accepted)	2,288 0 0

For restoring damage by fire, Castle Tavern, Long-alley. Same architect:—

Dearsley	£1,026 0 0
Wills	963 0 0
Gadsby	880 0 0
Papps	880 0 0
Day	650 0 0

For the chapels and lodge for the Battersea Burial Board, *minus* the inclosure fence, the board not being in a position to carry out the former contract:—

McLennan & Bird	£1,173 0 0
Bevis	1,113 0 0
Adamson & Sons	1,025 0 0
Bass	1,020 0 0

For erecting a villa at Buckhurst-hill, near Langton. Mr. J. Tanner, architect. Quantities supplied:—

Taylor	£646 18 0
Elstan	520 0 0
Axford	511 0 0
Turner & Son	475 0 0
Roper	450 0 0

For additions to the Maid and Magpie, Stepney. Mr. W. E. Williams, architect:—

Scott	£123 0 0
Brake	121 10 0

For addition and alterations to house at Thames Ditton, Surrey. Mr. Thomas Milbourn, architect:—

Atkinson	£265 0 0
Matthews & Son	230 0 0
Newland	192 10 0
Cannon	145 0 0

For building new luncheon-bar, The Dolphin, Coleman-street. Mr. William Nunn, architect:—

Day	£250 0 0
Buffam	225 0 0
Anley	221 0 0
Elsam	210 0 0
Gadsby	185 0 0
Papps (accepted)	180 0 0